

AMERICAN ARTISAN

March 1961

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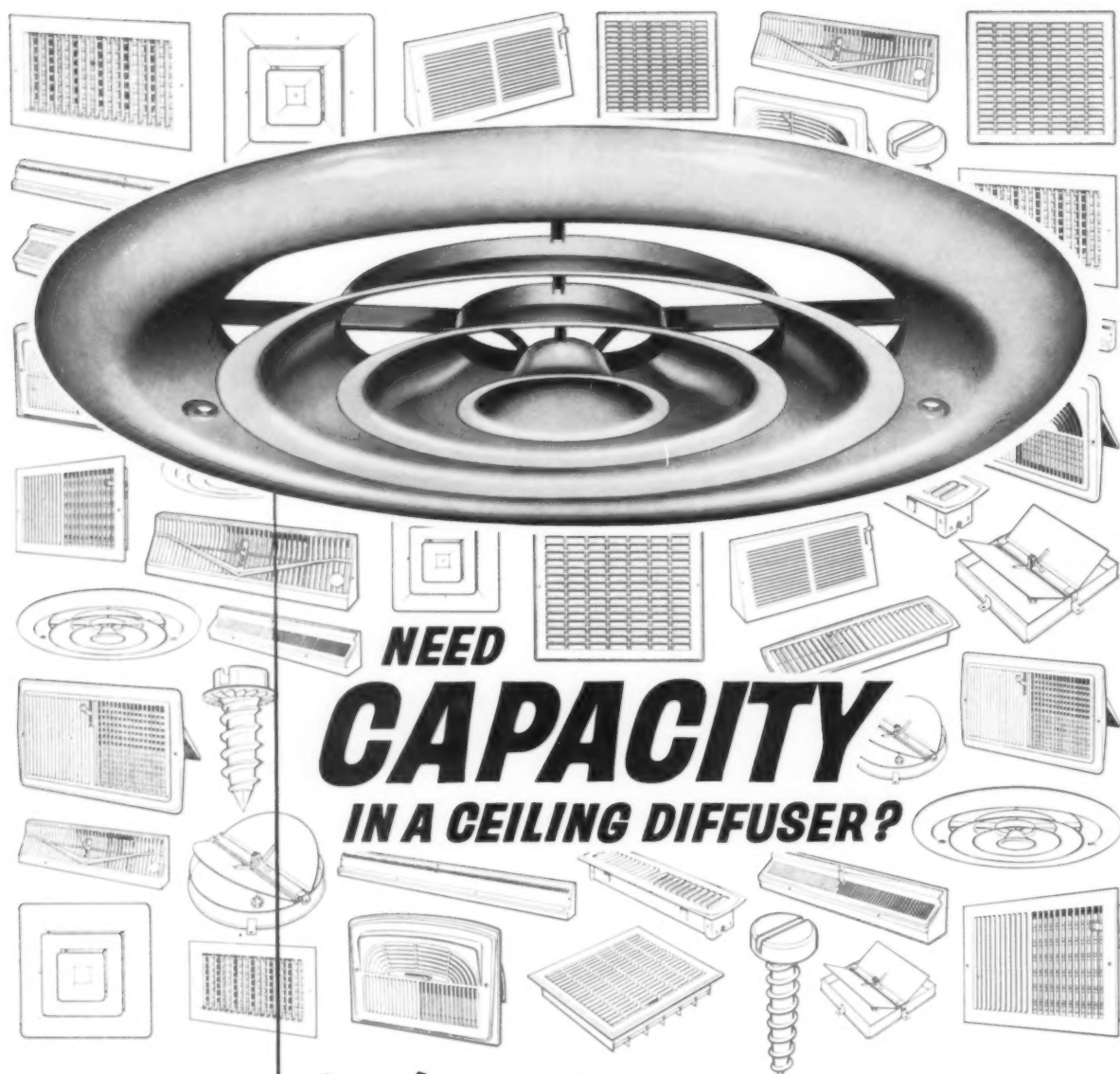
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Guidance and supervision are keys to
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University Microfilms
313 N First St
Ann Arbor Mich
Comp



NEED
CAPACITY
IN A CEILING DIFFUSER?

LOOK TO

Air Control...

A COMPLETE LINE PROGRESSIVELY ENGINEERED!

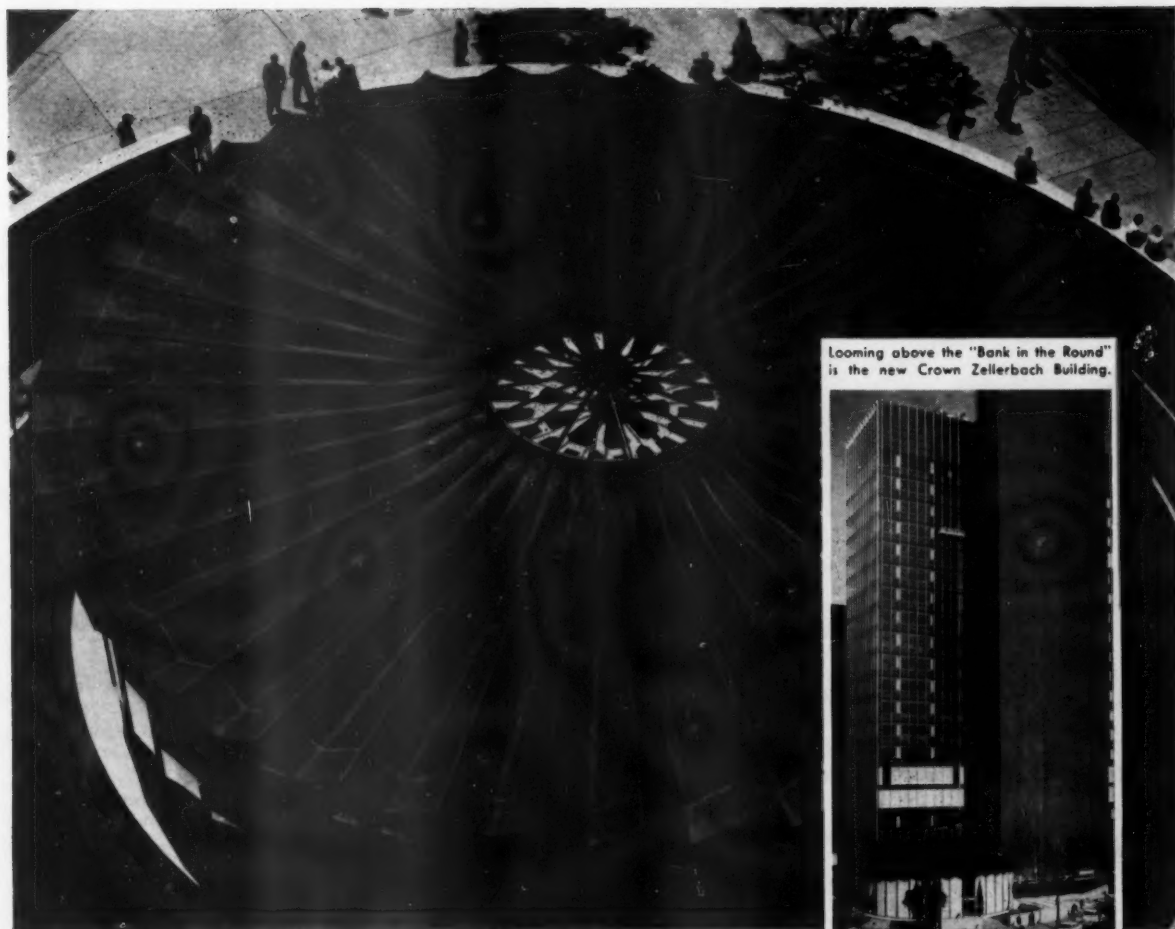
Air Control Ceiling Diffusers give you the added capacity that simplifies any overhead air distribution system, whether for heating or cooling. Available in round or square designs, they give you greater free area, size for size, than ordinary ceiling diffusers. Besides capacity, Air Control Ceiling Diffusers offer such features as advanced ring and vane design, decorator styling with a beautiful satin beige prime coat, built-in anti-smudge ring and sponge rubber gasket. Also available is a screw-type damper with Air Control's exclusive Adjusto-Stop balancer.

These Ceiling Diffusers are examples of the progressive engineering devoted to each product in the line. Write today for your copy of Catalog 60-AC. It shows the complete line of Air Control Registers, Grilles and Diffusers.



AIR CONTROL PRODUCTS, INC., 161 Center Street, Coopersville, Michigan

West Coast Warehouse: Leigh Industries (California), Inc., 649 South Anderson Street, Los Angeles, California



Looming above the "Bank in the Round" is the new Crown Zellerbach Building.

Architect: SKIDMORE, OWINGS & MERRILL; Gen. Cont.: HAAS and HAYNIE; Sheet Metal Cont.: FIRE PROTECTION PRODUCTS. Revere Distributor: PACIFIC METALS COMPANY, LTD. All of San Francisco, California.

"Bank in the Round" a striking example of the great freedom in design that is possible with **REVERE COPPER**

The "pleated" roof on the new Wells Fargo Bank American Trust Company building in San Francisco, Calif., is the result of an unusual design problem faced by the architects.

When they designed this ultra modern "Bank in the Round" they knew that many people would be looking down on it from the adjoining skyscraper in addition to those viewing it from the street level. The roof, therefore, could not be an ordinary one. Nor could the bank have a rectangular profile and still stand out against the tall building next to it.

The solution was the "pleated" roof you see above. It contains 12,000 lbs. of 16 oz. cold rolled Revere Copper, in 36" x 96" and 36" x 120" sheets. Copper was chosen to achieve this unusual roof because of its virtually unlimited flexibility in design, its eye-catching appearance (which takes on a striking patina as it ages) and its ease of workability into any desired shape or form.

This is another example of how the architect can dare to be different with copper because copper is so cooperative with his ideas, giving him practically unlimited freedom of design. A good reason to design your present and future structures with Revere Copper in mind.



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, N. Y.
Mills: Rome, N. Y.; Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.; Los Angeles, Riverside and Santa Ana, Calif.; New Bedford and Plymouth, Mass.; Brooklyn, N. Y.; Newport, Ark.; Ft. Calhoun, Neb. Sales Offices in Principal Cities.

Distributors Everywhere

AMERICAN ARTISAN

- Warm Air Heating • Sheet Metal Contracting
- Air Conditioning • Ventilation And Dust Removal

MARCH 1961

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Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals."



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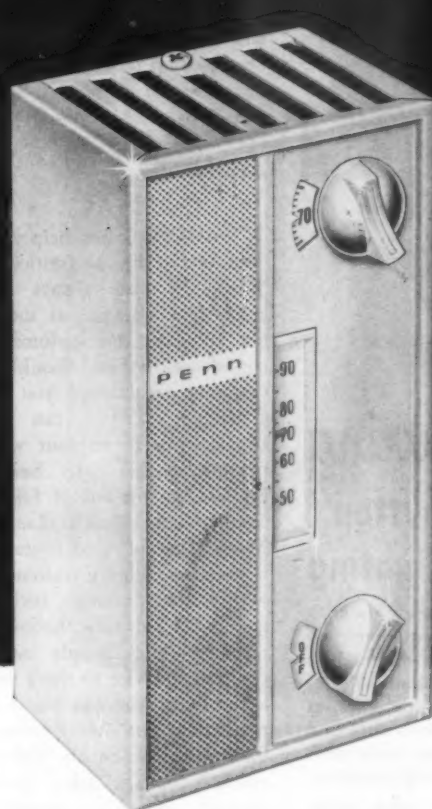
FOR HEATING - COOLING

Here's the new Series 888 RIMSET thermostat with its newest feature . . . separate temperature selection scale and thermometer scale! This is the one thermostat unit that handles 12 different heating and cooling functions. You just stock variables of the subbase . . . the same thermostat simply plugs onto any one of the subbases. Remember . . . RIMSET is easiest-to-set, easiest-to-read, simply dial the rim, the dial face remains stationary!



3

quality thermostats . . . take your choice for heating, cooling or heating-cooling jobs!



FOR LINE VOLTAGE HEATING

All-new, Type 822 line voltage heating thermostat features unique, easy-to-use, locking-type temperature selector knob. Extras include a built-in but concealed adjustable high limit stop . . . low operating differential . . . large terminals on back of thermostat for easy wiring. Models also for cooling or heating-cooling.



FOR HEATING ONLY

New . . . trim, thin-line Type 820 room thermostat with the dependable quality you expect and get from Penn. It features easy-to-read slide-set dial and separate thermometer scale . . . snap-acting contacts . . . ring-type heat anticipator. Easy to install and wire . . . requires no mounting bracket, no leveling.

Learn more about these better thermostats, ask your wholesaler or write to Penn.

PENN CONTROLS, INC.

Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

**Thumbing Through
This Month's Artisan**

... we find results of a nation-wide survey, conducted and compiled by American Artisan, in which the growing problem of noise hazards created by air cooled condensing units and water cooling towers located outside of air conditioned buildings is given detailed investigation in an attempt toward removing the cause or causes. In *Now is the Time to Head Off Future Trouble* it is pointed out that there is a rise in community interest toward curbing such noise. The article also tells how city ordinances have been and are being considered as a means for controlling location and installation of air handling equipment. Since growth in the summer air conditioning field would be seriously curtailed by such strict code specifications, greater care is recommended in construction and installation of equipment. Fourteen pertinent and related causes of noise are considered in the survey which now points to areas where corrective efforts could be made by those branches of the industry responsible. Among others, consideration was given to condensing unit cabinets, blower and propeller fans, compressor vibration and hum, frames and bracings, and installation practices as possible sources of noise.

Figuring

... the capacity of gas-fired and oil-fired, forced warm air furnaces with outdoor temperatures above design conditions is explained by Mechanical Engineering Laboratory, University of Illinois in *How to Figure Furnace Capacity* which answers

Safe...Convenient
...Dependable
OUTSIDE LIGHTING

**MODERN
LIGHTER TUBE**

for your
gas fired
appliances

featuring
"push-button"
pilot lighting

Designed for the manufacturer to become part of original equipment on all makes and models... the Modern Lighter Tube, with "push-button" pilot lighting from the outside, enables your unit to be completely safe and free from sometimes hazardous lighting practices.

The Modern Lighter Tube carries further and burns more evenly with a minimum of pressure and with any type of gas...

**ATTENTION MANUFACTURERS OF
SECTIONAL TYPE BURNERS**

Now... Modern Lighters, Inc. has available the "Modern Carry-Over Tube" for integral lighting of sections. Engineered by you to fit your product. Complete details and engineering samples available.

**MODERN
LIGHTERS,
INC.**

South Lyon, Michigan

WRITE FOR
LITERATURE



(Continued)

an inquiry received by the university staff, and outlines a method whereby furnace reserve capacity can be determined prior to installation.

By referring the length of burner cycles to the charts presented, the dealer-contractor can determine the reserve capacity at design temperature, and the outdoor temperature at which the burner will operate continuously. Step by step observation of a sample problem gives a clear picture of the method.

Availability

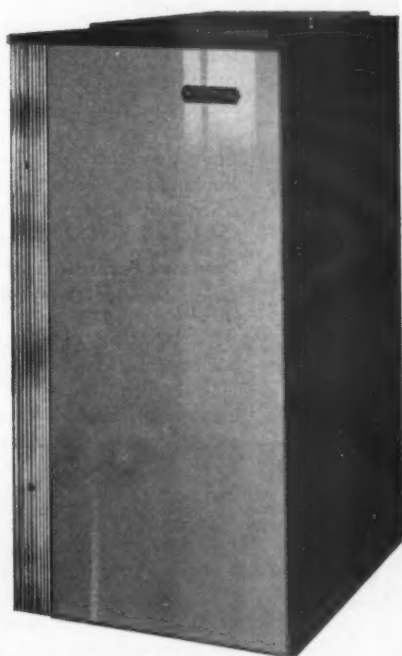
... can often help you "outdeserve the competition." When he can always be reached, a salesman is more apt to gain the customer's confidence in him. Should a customer recommend you to a friend, if you can be reached, you're on your way toward another sale. Being available is just one of *Seven Sources for Sales Leads*. Making use of your contacts is another. Helping customers with various problems, taking an interest in their hobbies, recommending people who can be of service to them are a few ways you can build a reputation for being more than just a salesman. Other pointers toward sales leads through more personable service show how to be "above average."

Progress

... reports compiled each week and channeled to the desk of contractor Marlowe C. Hodge, enable him to keep informed on all phases of all jobs in progress and to immediately remedy complications, when they arise. Outlined in *Condensed Reports Help Contractor*

24 AIR-FLOW PATTERNS FROM EACH UNIT

...you adapt new
Mueller Climatrol cooling
or heat pump low sides
with a screwdriver!



Talk about adapting to any situation! Each of these new units can be used in 24 different ways — adapting easily for use as a counterflow, upflow, or horizontal in either direction.

Available now from Mueller Climatrol: (1) Model 939 Air Conditioning Blower-Coil — in 2, 3, 4, 5 ton sizes ... (2) Model 339 Heat Pump Indoor Unit in 3 and 5 ton sizes ... and (3) Supplementary Electric Heat Package in 10 capacities from 20,500 to 82,000 BTU/hr.

They're made of modules ... and you adapt them easily, with just a screwdriver. To change a unit, you simply separate the sections, then put them together for the air-flow pattern you want, using proper cutouts. The handsome door panel, trimmed in bright metal, covers both modules.

It's easy. And think what it saves you on inventory costs. See your Mueller Climatrol man for details on these exciting new units *soon*. Or write direct.



24 Air Flow Patterns from Each Unit — Count Them!



2025 West Oklahoma Ave., Milwaukee 1, Wisconsin • 1024 Westminister Ave., Alhambra, California

the editor's notebook

(Continued)

Keep Pace With Jobs in Progress are a number of methods used which utilize these reports to give the complete progress picture. Among the management tools instituted by the company is an up-to-date record of every job the firm has done over the past ten years, proving to be a valuable aid in estimating procedures. In this way, the president can personally check every bid the firm puts out. The article also describes a number of job assignments undertaken by the firm, both typical contracts and in areas of custom work. Regardless of the job, however, the company finds that condensed reports facilitate production from first bid estimates to completion of the work.

No Response to Your Inquiry Card?

IF YOU SENT us a Reader's Service card from the January issue and failed to receive literature or information about the products you indicated an interest in, it is possible that your card is one of those few we received without name and address. If you have any doubts, write us a letter, and give us the name of the company whose products or literature you are interested in. We'll do the rest.

If you have not yet used the card but plan to do so soon, be sure your name and address are clearly written.

Urges Homeowners To Prepare for Summer

RECENTLY the Gas Appliance Manufacturers Association (GAMA) mailed a news release to all daily and weekly newspapers in which it was recommended that homeowners give some thought to summer air conditioning their houses before the arrival of



year 'round combination HEATING and COOLING



for replacements



for remodelling



for new homes



for projects



WRITE....

for information
and name of
nearest distributor



THE JOHNSON FURNACE COMPANY
2129 WEST 117th STREET, CLEVELAND 11, OHIO

the editor's notebook

(Continued)

the first hot spell. GAMA said, "Remember those nights last summer when heat and humidity ruined your sleep and sapped your energy? Well, do something about it before it happens again. The remedy is year 'round air conditioning."


"Consult your local heating and cooling dealer-contractor for a survey of your home's air conditioning opportunities while equipment is in good supply and labor is available, since both of these factors can have a favorable effect on the cost of installation."

I like this kind of early promotion that gets people thinking about being ready when summer arrives.

Reviews Essentials of Good Service Operation

RECENTLY I heard Steve Carroll of Peerless Corp.'s Atlanta branch, discuss the operation of dealer-contractor service departments. His comments were based on his own experience and are well worth reviewing here:

- A staff of three or more servicemen requires a service manager. Having a service manager to provide guidance for the staff not only contributes to economy of operation but also increases the company's prestige.
- A dealer-contractor must expect to have a serviceman for each 800 to 1200 service calls a year. (The type of service offered and the skill of the service personnel account for the variation between 800 and 1200.)
- It is false economy to repair parts if there is any doubt as to wear, function, etc.
- Less than 1 percent is considered to be average for uncollected service charges.
- A well stocked service department will have about



"Once Again
Our Lockformers
Paid Off..."

"Helped Us
Install Over
1½ MILLION FT. OF
DUCT ON SCHEDULE!"



Ductwork fabrication and installation was by AL-ZACK—a combined venture of Anderson & Litwack Co., Hillside, Ill., and The Zack Company, Chicago. Here, one of the Lockformers is rolling right angle flanges on a production basis for use as needed during installation.



This view shows but a part of the intricate system of ducts installed in the giant exhibition area of McCormick Place, new Chicago exposition center.

"Fact is, we could never even handle a job this big without Lockformer equipment," reports Charles Howard, General Manager of The Zack Company, sheet metal contractors and fabricators. "Every Lockformer in the place contributed and, when you figure the time and manpower saved, they must have paid for themselves many times over just on this job alone."

36 Million cu. ft. of air conditioned space in Chicago's new McCormick Place required a lot of ductwork with miles of standing seams, Pittsburgh locks, right angle flanges, cleats and other connections rolled on Lockformers. It meant meeting high quality specs . . . and a tight schedule.

It's just another example of how Lockformer-equipped shops can handle BIG as well as LITTLE jobs faster and better, using fewer men. (Small shops get the same advantages as big ones, too.)

Send for the Lockformer catalog of machinery and equipment made to handle any size and type of sheet metal job.

LOCKFORMER®

TIME SAVING, MONEY MAKING EQUIPMENT

THE LOCKFORMER COMPANY

Dept. A 4615 W. Roosevelt Rd., Chicago 50, Ill.

In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ont.

the editor's notebook

(Continued)

\$5000 in inventory that turns over at least three times annually.

- The best sales leads come from comments made by servicemen.

- Clean trucks and clean uniforms are essential to establish customer confidence in the work performed.

Does Staff Know What 'Fringe Benefits' Are?

WE READ A LOT about employee benefits and fringe benefits and understand the material we read. It's only natural to believe that employees understand these matters too, but it's not always so. I was surprised — as I believe you will be — to learn that Opinion Research Corp. of Princeton, in interviewing some 500 workers to test their reaction to certain words management often uses, found that "employee benefits" meant something to 82 percent of those interviewed, but only 54 percent understood "fringe benefits." Only 54 percent knew the meaning of mass production (one worker said it was "producing more than the buyers can absorb"). "Corporation" carried overtones of money, power and selfishness; "company" drew a more favorable response. The survey also disclosed that only 12 percent of the workers read and understand the average article in company publications.

Here is another job that management must handle well if the cost of these benefits is to produce the desired results.

What Good Advertising Program Can Do For You

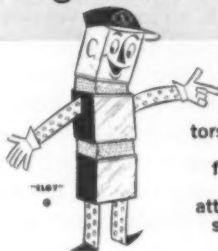
BECAUSE IT'S HARD to measure the full effectiveness of advertising, some people tend to discount it as a waste of



Only
ELGEN
Makes
"SILENT
DUCT" ...
Patented*

* U.S. Patent No. 2,777,753

the **FLEXIBLE**
DUCT CONNECTOR
that's so easy to use...
engineered to make more profits!



Just mark, cut, notch and bend! That's all there is to fabricating your own flexible duct connectors with "Silent Duct." This patented pre-assembled unit uncoils flat from a handy, bench-high dispenser ... saves time and money. Metal attached to material securely through special "Steel-Grip" locking method ... offers unsurpassed strength and holding power. Available in canvas, neoprene, asbestos or with new "Neo-Bestos" fabrics.

PRE-ASSEMBLED
METAL TO MATERIAL
— ONE UNIT

GALVANIZED
METAL

ENOUGH METAL
TO MAKE ANY
CONNECTION

PERMANENT
LOCK SEAM

ASBESTOS, NEOPRENE COATED
FIBREGLASS OR UL APPROVED
CANVAS.

ELGEN

ELGEN MANUFACTURING CORP.
32-49 GALE AVENUE, LONG ISLAND CITY, NEW YORK

■ Don't wait...write today for complete details and "spec" sheets.

the editor's notebook

(Continued)

money. But those who have made a lifetime study of the value received from money spent on sales promotion have a different point of view. It's my opinion that without well planned and sufficient advertising programs, no company will grow to the point where it is a major factor in the industry with which it is associated.

To back up this point, I quote from a recent presentation by Harold Hoffman, assistant director of advertising, United States Steel Corp:

"Advertising is not a sales cure-all, but an important sales tool that can do much to make a company's marketing effort run more effectively. Company officers should set reasonable, attainable and measurable objectives, and then turn the creative job over to competent advertising people to carry out the program.

"Advertising is equally important to producers of consumer goods as to producers of industry goods. It can: 1) reach more people than salesmen can; 2) reach narrow and specific groups of prospects; 3) convey specialized information on the right company image; and 4) do all this at a low cost per impression.

"It must also be understood that there are many things advertising cannot accomplish. It cannot always hold sales up in a declining market or help an overpriced product for long. In addition, it cannot aid products that are poorly distributed, poorly installed, suffering from poor quality control or always out of stock.

"Delivery and installation schedules, size and training of sales staff, packaging and the style of the product can also affect advertising impact. The buyer is king. Your product

GETTING YOUR SHARE OF THE METAL ROOFING BUSINESS?



Every day more and more metal roofs of Follansbee Terne are going on new modern buildings

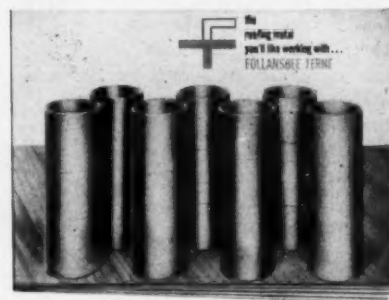
You've probably noticed it too—the metal roof of Follansbee Terne (you may know it as "tin") is getting more popular every day. There's good reason for the increased interest in Terne—modern day architecture is giving more recognition to the roof as an important design element, and the metal roof provides the architect with an opportunity to use distinctive form and color to create a desired effect.

Form and color are not the only advantages of Terne. Time and time again, Terne has proved it is a lifetime material. Many Terne roofs have been in service for over 100 years.

For the roofer, Follansbee Terne means a better roofing job and a better profit. It is easy to work, easy to solder and Terne's lead-tin alloy coating makes an excellent bond with paint. Follansbee Terne is priced to offer the roofer a better profit.

As a complete roof material, or as weather-sealing, Follansbee Terne is a roofing metal that has no equal. It's a building material that will help you get your share of the metal roofing business.

NEW a book prepared especially for sheet metal contractors



Gentlemen:

Send me your free book on Follansbee Terne.

Name

Firm

Street

City Zone

State



FOLLANSBEE STEEL CORPORATION
Follansbee, West Virginia

the editor's notebook

(Continued)

has to be the solution to his problem, or he'll buy from somebody else.

"The lack of a single objective which sets forth what the advertising program is expected to accomplish is the greatest problem encountered in today's advertising.

"Measurement of effectiveness is important. You wouldn't think of keeping a salesman without maintaining a record of the sales he has made. So why not also with advertising? Without benchmarks to work against, it is impossible to administer a continually effective advertising program in today's rapidly changing markets."

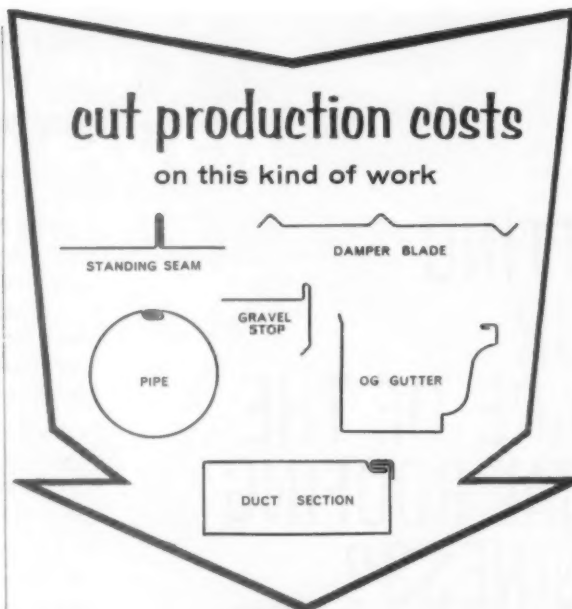
GAMA Data Serves Double Purpose

DID YOU KNOW that the average American family uses about 44,000 gallons of domestic hot water annually? I never realized it was this much, but according to the Gas Appliance Manufacturers Association, this is the current consumption, and it amounts to 120 gallons per day for a family of four persons. The quantity of hot water per family has been increasing steadily since 1950, when it was estimated to be about 75 gallons per family.

This information should be useful both as an engineering tool—to accurately select the size water heater needed for a family—and as a sales tool to back up your recommendations for larger and more expensive models.

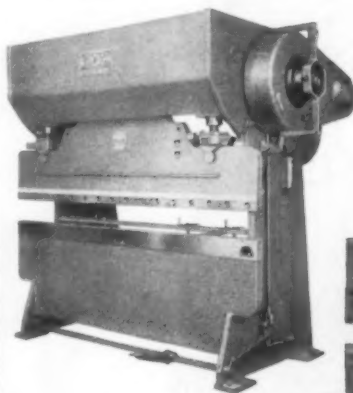
SBA Lists Sources Of Management Material

FOR ELEVEN months we've been quoting from the Small Business Administration's Aid 46, "Essential Personal

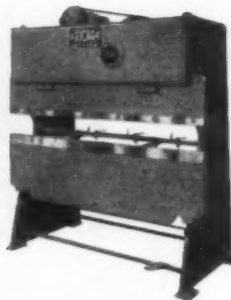


CHICAGO® PRESS BRAKES

with the plus features
for
SHEET-METAL WORK



Models A, B, C, L
30, 36, 50 and 60 Ton Capacities



Models 131 and 265
11 and 25 Ton Capacities

Complete literature, or recommendation on any job upon request
Distributors in all principal cities



Press Brakes • Straight-Side-Type Presses • Press Brake Dies
Hand and Power Bending Brakes • Special Metal-Forming Machines

DREIS & KRUMP

MANUFACTURING CO.

7404 South Loomis Boulevard, Chicago 36, Illinois

the editor's notebook

(Continued)

Qualities for Small Business Managers." This is the final suggestion offered in the bulletin:

"Owners and managers of small firms who want to go further into the subject of leadership characteristics are referred to the following sources. They are not the only ones which could be listed, but are representative and can be helpful. They are also useful in locating still other sources."

Skills of an Effective Administrator, by Robert L. Katz, Harvard Business Review, Soldiers Field, Boston 63, Jan.-Feb. 1955, Vol. 33, No. 1, 33-32. \$8 per year. \$2 per copy.

The Small Manufacturer and His Specialized Staff, by Donald R. G. Cowan. Superintendent of Documents, Washington 25, D. C. 1954. 20 cents.

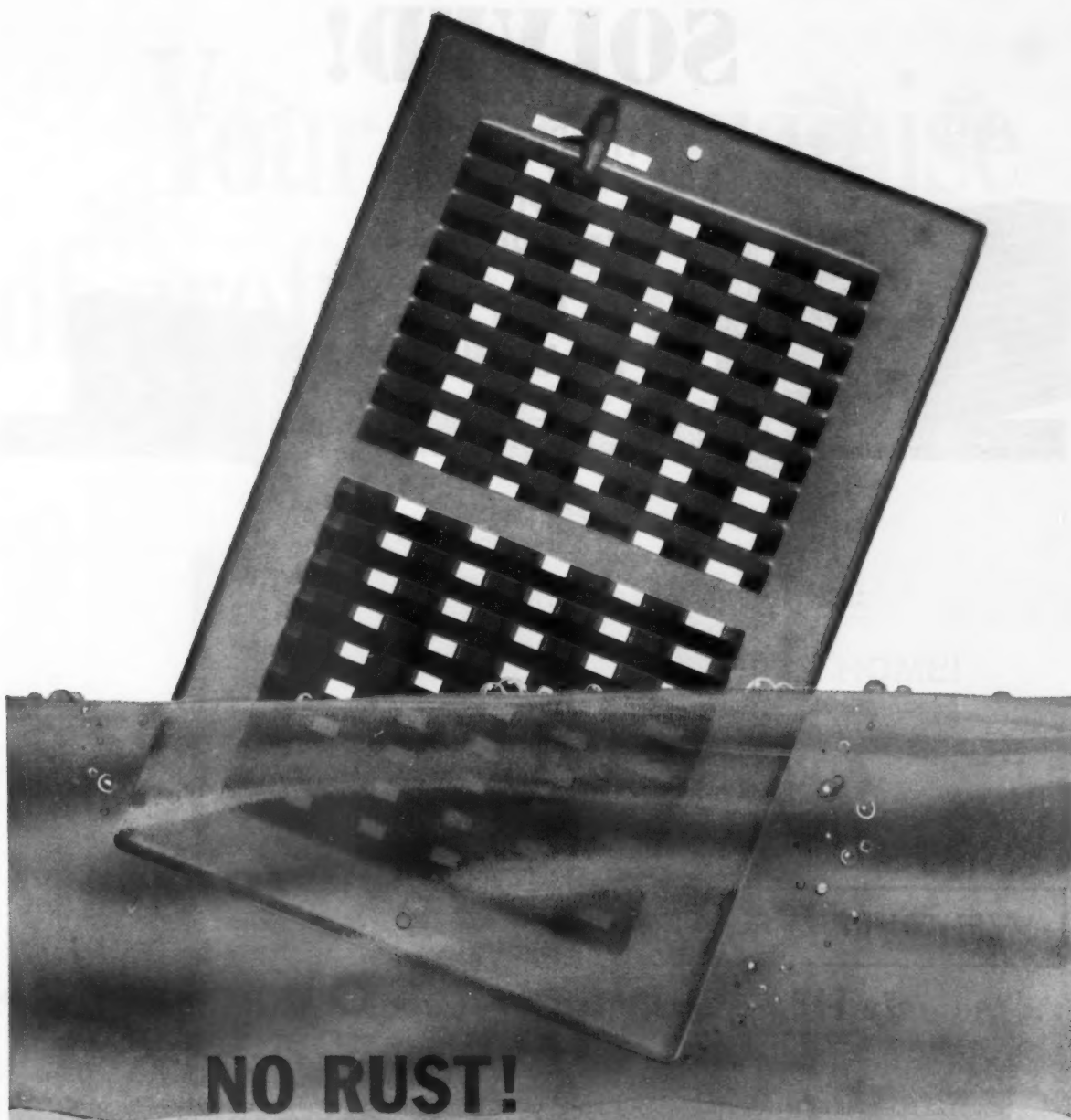
The Essential Qualities of Good Supervision: A Case Study, by Joseph K. Bailey, Personnel, January 1956, pages 311-326; *Influence: A Key to Effective Leadership in the First Line Supervisor*, by Donald C. Pelz, Personnel, November 1952; and *Identifying and Developing Potential Leaders*. Personnel Series, No. 127. All three published by American Management Association, 1515 Broadway, New York 36.

Don't Be an Indispensable Man, by Martin M. Bruce, Management Methods, Vol. II, No. 3, 1943. Management Magazines Inc., 22 W. Putnam Ave., Greenwich, Conn.

This is an impressive list of good reading for the businessman who wants to get ahead.

Clyde M. Barnes

Editor



NO RUST! WHY?

Reason? All Lima air conditioning grilles and registers are treated with Epon®; the very same rust inhibitor used on submarines. It's another Lima exclusive; put there to keep your customers happy with the Lima equipment you sell. Write for our catalog and prices.

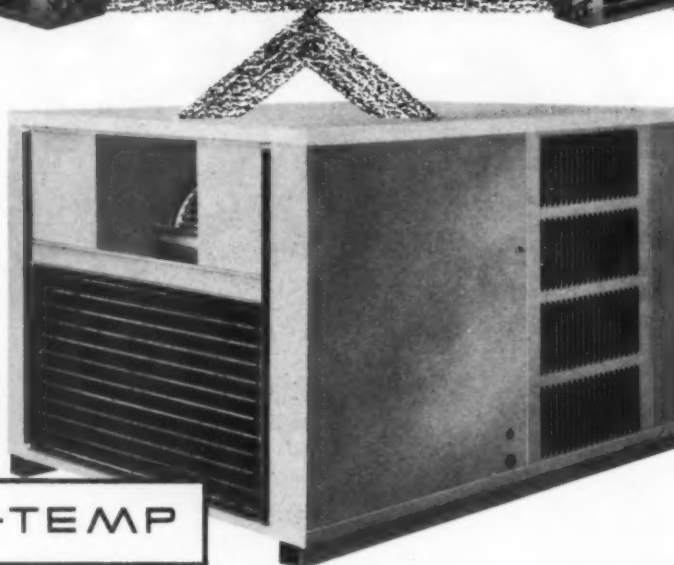
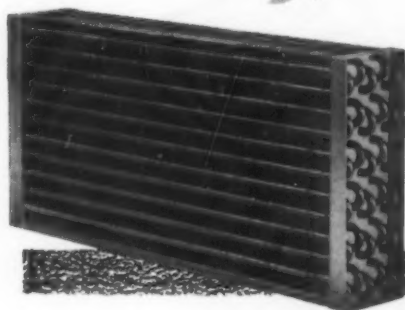
Lima®

REGISTER COMPANY
1785 N. Cable Rd., Lima, Ohio

A COMPLETE LINE OF REGISTERS, DIFFUSERS AND GRILLES FOR HEATING AND COOLING... QUALITY-PLUS PRODUCTS OF AMERICAN CRAFTSMANSHIP.

SOLVED!

THE PROBLEM OF HEAT PUMP COIL BALANCING



WRIGHT-TEMP

... the only **HEAT PUMP** with *Capacitrol Balanced Coil**

*Patent Applied For

Wright-Temp designers have overcome the problem of Heat Pump coil balancing with exclusive Capacitrol Balanced Coil*. Indoor coil automatically adjusts from 3 rows to 5 rows when unit switches from cooling to heating... provides 40% larger coil surface when needed for increased efficiency and greater heat transfer capacity.

You'll like Wright-Temp because exclusive Capacitrol reduces high head pressure cut-out and resulting nuisance calls. Your customers will like Wright-Temp because he gets greater heating capacity at lower operating costs.

As a further indication of quality engineering, Wright-Temp Heat Pumps are designed to meet the extreme demands of Western and Southwestern climates with all units calorimeter rated beyond ARI specified conditions to 115° cooling cycle and 10° heating cycle. This extra broad design range assures that Wright-Temp heat pumps will perform as rated under even the most adverse conditions.

Available in 2, 2½, 3, 4, 5, 7½ and 10 ton sizes... package and split systems... there is a Wright-Temp model to meet your every installation need. All units Underwriters Laboratories Approved.

Recommend and sell Wright-Temp Heat Pumps... you can count on quality.



For complete information write to

WRIGHT-TEMP MANUFACTURING COMPANY

2902 West Thomas Road P. O. Box 11247 Phoenix 17, Arizona

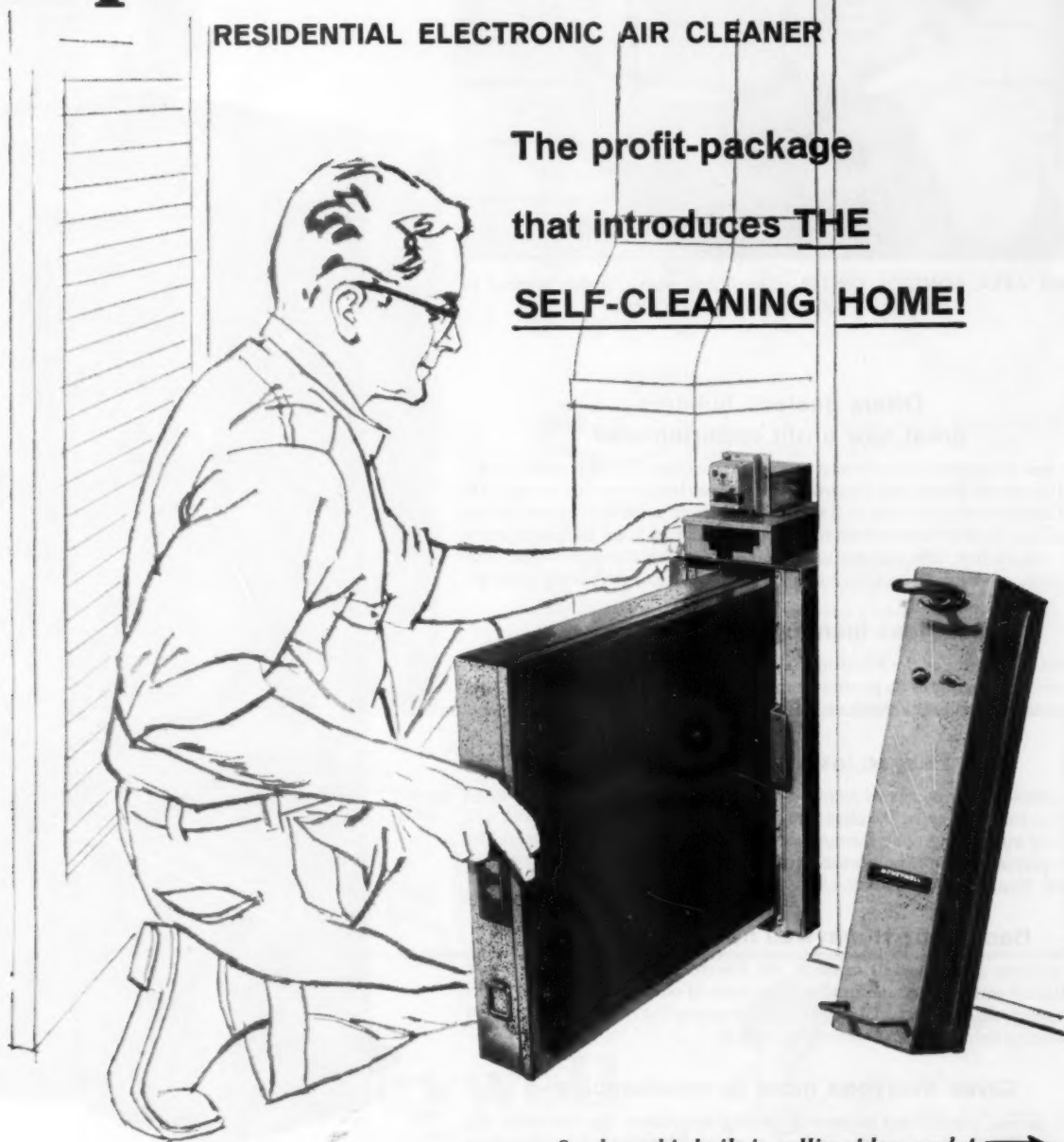
"Creating New Climates for Better Living"

Your best promise of profit for '61!

HONEYWELL'S NEW

RESIDENTIAL ELECTRONIC AIR CLEANER

The profit-package
that introduces THE
SELF-CLEANING HOME!



See how this built-in selling idea works! ➡

**Honeywell's brand new housewife item
that makes the self-cleaning home possible!**



LIVING AREA CONTROL CENTER—The homeowner's visible symbol of clean air—a constant conversation piece.

**Offers dealers, builders
great new profit opportunities!**

Now you can answer that universal complaint: "woman's work is never done". The Honeywell Residential Electronic Air Cleaner traps from 70% to over 90% of all airborne dirt particles in a home. With all its work and money-saving advantages, it offers tremendous selling potential and a good margin of profit. Now, for the first time you can offer your customers a complete home comfort package—heating-cooling, humidity control and electronically clean air.

Cost less than a good refrigerator

The initial low cost of the Electronic Air Cleaner is an important selling point. And because it requires no plumbing and fits easily into any forced air system, it can be installed for as much as \$100 less than other units.

Easy to install and maintain

The complete unit comes to you as a package, pre-assembled and pre-wired at the factory. It can be installed with only minor changes in ductwork and with 120 volt wiring. There are no periodic filter replacements because the cell is permanent, and the homeowner performs all the simple maintenance himself. You keep your profit!

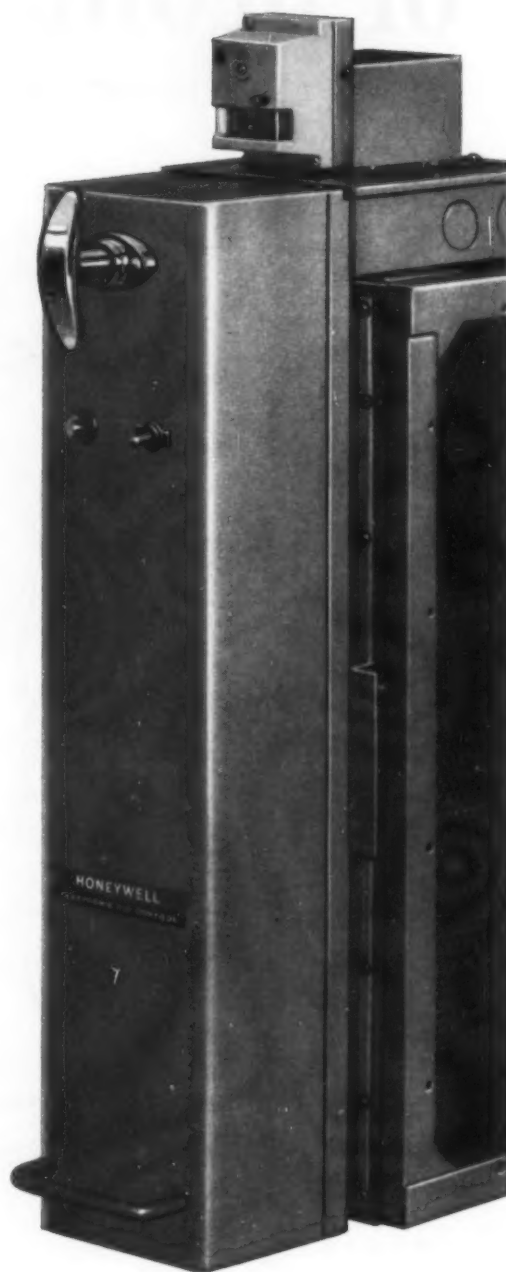
Backed by Honeywell name and service

As a product of Honeywell research, the Electronic Air Cleaner sets a new standard of performance and quality. The name is one your customers know and respect. And with 112 Honeywell offices across the nation, you get sales and training help when and where you need it.

Gives everyone more to merchandise

Added to your present line of heating-cooling equipment, the Electronic Air Cleaner will help you beat the cost-price squeeze by offering builders and homeowners a brand new package. Builders will find it a dramatic new sales feature. Good for your existing home modernization and add-on business, too.

The first designed



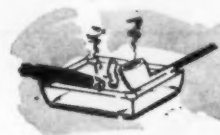
Electronic Air Cleaner exclusively for the home!



Women like the idea
of less housework!



Who doesn't want lower cleaning
and redecorating costs!



Talk about banishing smoke and
minimizing odors!



The whole family benefits from
removal of up to more than 90%
of airborne irritants and bacteria.



We're helping you sell it!

See how Honeywell is telling your best prospects
about the benefits of Residential Electronic Air
Cleaning with big, strong advertisements in
House Beautiful, *Better Homes & Gardens*, *Sunset*,
American Home, *House & Home* and many of the
building annuals.

Honeywell
 *First in Control*
SINCE 1885

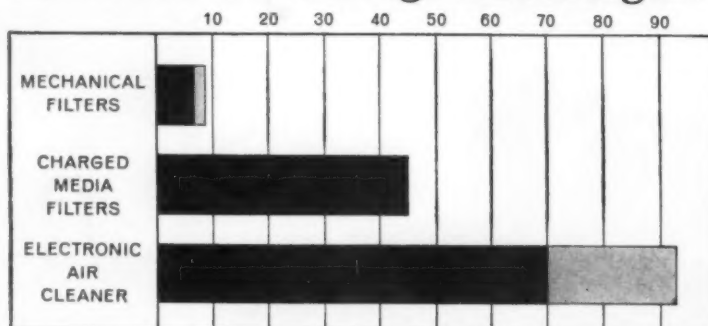
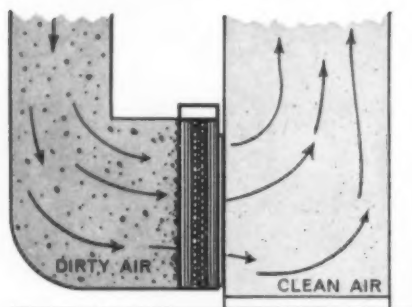


Look at the
selling
advantages
you get →



Reliability is built into
Honeywell's new Electronic Air Cleaner

Fresh sales appeal... Powerful selling advantages!



The Honeywell Electronic Air Cleaner is the most compact unit on the market. It's available in two sizes (20 by 25 and 16 by 25 inches) and is only seven inches thick when installed in the return air duct. Handles up to 2200 CFM (about 5½ tons of cooling—220,000 BTU output, heating.)

Tested by the National Bureau of Standards dust spot method, the Electronic Air Cleaner traps from 70 to over 90% of all airborne particles. By comparison, standard mechanical filters have an efficiency range of from 5 to 8 per cent; charged media filters average less than 50% efficient.



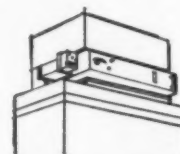
Living Area Control Center provides a constant performance check. Indicates when collectors need washing. Permits remote operation of fan.



Filter-Flag* indicates at furnace or air conditioner and at the Living Area Control Center when the protective screen needs cleaning.



Simple Washing Kit includes everything the homeowner needs to wash the air cleaner collectors (normally once every three months).



One-side Access feature makes it possible to install the unit in any location. Clearance is required only for removal of the door assembly.

Comes completely pre-wired and pre-assembled

The Honeywell Electronic Air Cleaner is shipped from the factory completely pre-wired and pre-assembled. Electricians simply hook up the 120-volt connections. Sheet metal men install in return air ductwork with standard fittings.

It can be installed with any central forced air heating, cooling or ventilating system, in a new or existing home. Compact design fits all types of systems, regardless of model or location.

The unit installs as a boot assembly in the return air duct, just ahead of the fan compartment. Mounts in any position, vertical, horizontal or angular, left or right air flow.

For complete details on Residential Electronic Air Cleaning and for a free merchandising kit, call your nearby Honeywell office. Or write Honeywell, Dept. AA-3-36, Minneapolis 8, Minn. In Canada, write Honeywell Controls, Ltd., Toronto 17, Ont. Sales and Service Offices in all principal cities of the world.




Honeywell



First in Control

SINCE 1885



ALL PRICES CUT!

**NOTHING'S CHANGED BUT
THE PRICES! STILL THE SAME
FINE PRODUCTS! STILL THE
INDUSTRY'S MOST COMPLETE
LINE — AMERICAN-STANDARD!**

American-Standard Air Conditioning Division has reduced prices on every unit in its warm-air heating and air conditioning line. This gives

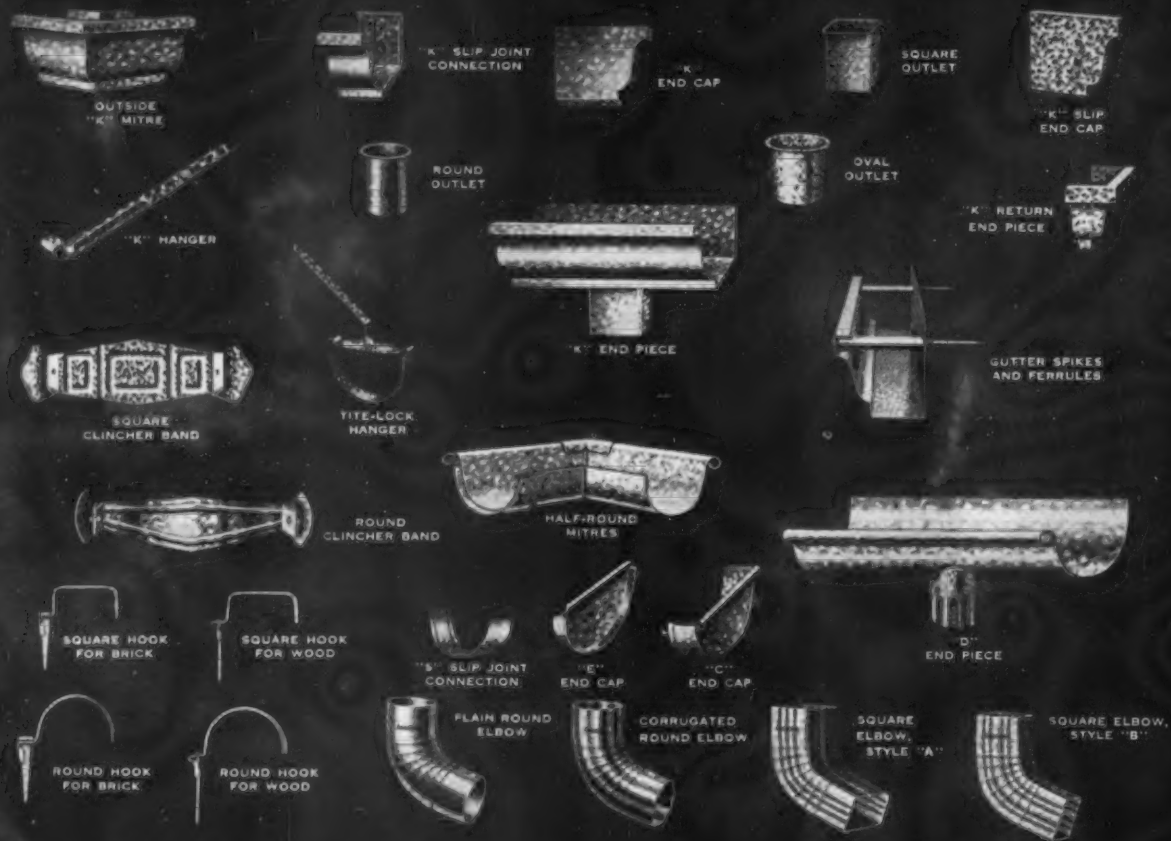
American-Standard Dealers the most powerful competitive position in the business—an opportunity to match them all on price and beat them all on quality! You can make the upcoming cooling and heating seasons the most profitable ever. Contact your American-Standard Air Conditioning Division Distributor for his new, low price list. Call him today!

If you are not an American-Standard dealer—right now's the profitable time to become one! Call your nearby distributor, or write: American-Standard Air Conditioning Division, 40 West 40th Street, New York 18, N. Y.



AMERICAN-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation

AMERICAN-Standard
AIR CONDITIONING DIVISION



Save costs on your gutter jobs ...using the complete MILCOR line

Simplify your buying...stocking...record-keeping and installation by filling all your needs with one dependable brand.

Whatever you want in gutter and accessories, there's a Milcor product that fills the bill. Each piece is precision-made for easy fit and fast installation. You can get everything the job requires from one source — save valuable time by reducing paperwork and bookkeeping — save man-hours on receiving and stocking, too.

Go Milcor all the way on all your roof drainage jobs. Call your jobber for prices, or write the nearest branch listed below.

**Milcor Pre-flanged
Highback Gutter cuts
your job costs 3 ways!**

1. Eliminates flashing.
2. Eliminates a brake operation.
3. Enables you to finish jobs faster.

4" and 5" sizes; 10-, 20-, 25-, 30-, and 32-ft. lengths; 28- and 26-ga. Ti-Co galvanized steel.



*You can stake your reputation on
a Milcor installation!*

Member of the  Steel Family

MILCOR[®]

Inland Steel Products Company

DEPT. C-4023 W. BURNHAM ST., MILWAUKEE 1, WISCONSIN • BALTIMORE, BUFFALO, CHICAGO, CINCINNATI, CLEVELAND, DETROIT, KANSAS CITY, LOS ANGELES, MILWAUKEE, NEW ORLEANS, NEW YORK, ST. LOUIS

SM-14

WHAT'S HAPPENING . . .

OHI Convention To Put Accent On Efficiency

NEW YORK CITY — "Profit Through Efficiency" will be the theme of the Oil Heat Institute's 39th annual convention, scheduled April 23-27 at the Statler Hilton Hotel, Washington, D. C.

The technical division symposium will spotlight oil burner service. Speakers will include Frank Dunn, Atlantic Refining Co., who will discuss "Burner Service Makes the Difference;" M. J. Reed, Mobil Oil Co., who will present "A Review of Technical Division Projects and Activities;" and Richard Wright, Iron Fireman Mfg. Co., who will cover "The Practical Meaning of the New Changes Contemplated in Heating Oil Specifications."

Subjects scheduled for discussion at the Dealer Management Clinic include: "Increasing Service Agreement Volume," "Electric Heat, Its Claims and Its Competitive Threat," "How to Sell Oil-Fired Water Heaters;" "New Low Temperature Vent for Oil Burners and What It Means to Your Business;" and "Management Attitude and How It Affects Your Personnel and Efficiency."

Sell More Unitary Air Conditioners

WASHINGTON, D. C. — Manufacturers' shipments of unitary air conditioners reported to the Air-Conditioning and Refrigeration Institute for the first three-quarters of 1960 totaled 224,302 units, excluding coils, a gain of 12 percent over shipments for the same period in 1959. (ARI estimates that

(Continued on page 28)

SMACNA Schedules Forums, Social Activities for LA Convention

ELGIN, ILL.—This year's convention of the Sheet Metal and Air Conditioning Contractors' National Association is scheduled to be held in Los Angeles, a city famous for its many sightseeing attractions and other entertainment available to visitors. The Ambassador Hotel, where the convention will be held Apr. 24-26, has agreed to accept reservations for arrival before the convention begins. In addition, any members who wish to do so may stay on after the convention closes, so that they will have ample time to enjoy the city's attractions. Members, chapters and chapter secretaries desiring special accommodations should direct their requests to Vern Schlect, Sales Executive, Ambassador Hotel, 3400 Wilshire Blvd., Los Angeles 5.

To Visit Disneyland

One notable event, scheduled Sunday, April 23, is a visit to Disneyland, where members and their families may spend the greater part of the day. Tickets in book form will be available from SMACNA, and the association will provide official buses to and from the park. Other social events scheduled include a reception in the hotel's sun club pool area and the annual convention banquet, which will follow adjournment of the convention.

In addition to general business sessions, numerous forums are scheduled covering such subjects as business management, labor relations, architectural sheet metal, ventilating and air conditioning, equipment financing, performance of new machines, etc.

Following is a tentative program of subjects scheduled for presentation at the various forums:

Monday, April 24

10:00 a.m. — General Business Session

Reports of president, treasurer, secretary

2:00 p.m. — Business Management Forum

Management — Perpetuation or Liquidation

Insurance for Sheet Metal Contractors

Contractor-Banker Relationship

Tuesday, April 25

9:00 a.m. — Labor Relations Forum

Report on new apprentice course of related instruction

1961 national apprentice contest and committee awards

Report of National Joint Labor Relations Adjustment Committee

Sheet Metal Industry Funds — Panel discussion

3:00 p.m. — Open Discussion Period

NJBSD developments in 1960 Labor legislation

Wednesday, April 26

9:00 a.m. — Ventilating and Air Conditioning Forum

Report of low pressure manual committee

Report of high pressure manual committee

Report on aluminum for ducts Applying acoustical linings

9:00 a.m. — Architectural Sheet Metal Forum

Suggested specifications for architectural sheet metal

Gravel stops and fascia

2:30 p.m. — Planning for the Future

New machines

Lease-purchase agreements

Amortization

Straight lease (trucks and automobiles)

7:00 p.m. — Annual banquet

(More news on page 24)

NEW AIR COOLER FEATURES

ICP

IMPROVED
COOLING
PERFORMANCE

GAFFERS & SATTLER IS THE NEWEST FOR 1961!



BIGGER COOLING PADS—20% thicker, special chemically treated aspen pads greatly increase cooling efficiency.

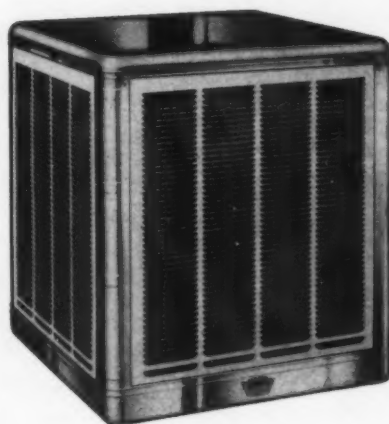


BIG SCOOP BLOWER WHEELS—Comparison proves that G&S wider, deeper blades move greater air volume.

MORE G&S QUALITY FEATURES for Increased Cooler Profits

*Bottom and Side Discharge,
Full-View Window Models,
Residential and Commercial,
2000-16,000 CFM*

Heavy Gauge Galvanized
Steel Cabinets • 2-Speed
Controls • Uni-Flow Meters
and Troughs • Water Minder
• Screw Constructed • No-
Sag Pad Rack • Bonderized
Oversize Cabinets

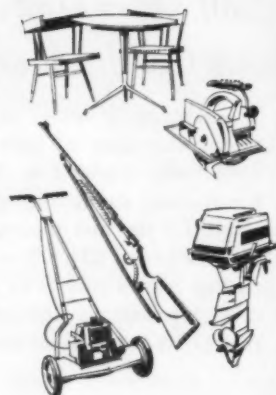


NEW REASON TO BUY



TOP GUN

You'll want to throw a wide loop around the Top Gun program, pod'ner, and heat up your G&S brandin' iron. There's a corral full of excitin' gifts for you and the whole family when you sell Gaffers & Sattler air cooler—air conditioning brand. And gifts start with your first sale. So register for Top Gun today!



NEW AIR CONDITIONING CONCEPT

THUNDERBIRD WEATHERAMIC

It's here, the first and only practical, field tested solution for pre-cooling condensing coils during extreme heat periods. The hotter the temperature, the more efficient the cooler operates—actual cooler discharge temperatures will be from 25° to 30° less than ambient air. The G&S Thunderbird Weatheramic condensing unit combines the best of air conditioning and evaporative cooling to create an entirely new profitable market. Customers buy because they save three ways: 1. First cost; 2. Operating cost (up to 30% lower); 3. Trouble-free service.

GAFFERS & SATTLER

*Sell the Complete Line of PFL Air Conditioning
Precharged for Fast Installation at Less cost*

Remote Units • Self-Contained Units • Heat Pumps (Field Tested)



AVAILABLE IN
2 AND 3 TON
CAPACITIES



FOR THE NAME OF YOUR NEAREST
GAFFERS & SATTLER DISTRIBUTOR
MAIL COUPON TODAY!

GAFFERS & SATTLER

8111 W. Beverly Blvd.
Los Angeles 48, California

I'd like to know more about G&S big profit products
and programs for 1961.

- ☐ Please send literature and other information.
☐ Please have a Representative call.

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

WHAT'S HAPPENING...

(Continued from page 21)

Expect '61 Air Conditioning Sales to Set New Records

CHICAGO — That 1961 will be air conditioning's biggest year is the opinion of many industry leaders whose companies exhibited equipment at the recent International Heating & Air Conditioning exposition held at Chicago's International Amphitheatre.

"Acceptance of the principle of air conditioning is increasing," said Frank J. Nunlist, executive vice president of Worthington Corp. "Air conditioning is bound to be a growth industry, regardless of what happens to the economy. Whether home building is up or down, there will be a higher percentage of new air conditioned homes. We can assume a 15 to 20 percent annual rate of growth in central air conditioners and package systems, depending upon the rate of home construction."

Russell Gray, president of Carrier Air Conditioning Co., pointed out that central air conditioning of residences last year was up 10 percent over 1959, despite the decline in home starts. One of the reasons he cited was the increasing number of speculative builders who found air conditioning an important factor in improving their sales.

"These same factors make the outlook for 1961 somewhat optimistic, with an upturn in both housing starts and the economy expected to offer an added push toward the end of the year," Mr. Gray said.

Borg-Warner Corp.'s York Div. expects the air conditioning portion of its business to be up 20 percent with even a moderately good balance in the economy and normal summer temperatures. Reviewing the growth of air conditioning and predicting the future, Joseph

B. Elliott, president and chief executive officer of York, said the installed value of commercial and residential air conditioning reached \$1.5 billion in 1960. "If the industry holds the same rate of growth, it should pass the \$2 billion mark early in 1962," he said.

D. C. Minard, president of the Trane Co., said his company will show a substantial increase in the first quarter this year over the first quarter of 1960, which was comparatively light although 1960 as a whole was the most profitable year in the company's history, with sales exceeding \$100 million for the first time.

Launches 'Certified Air Delivery' Program

CLEVELAND — The Home Ventilating Institute has launched a "Certified Air Delivery" program which requires that labels be placed on all ventilating products manufactured by HVI members. Ratings for fans and hood-fans have been established by tests made at the Texas Engineering Experiment Station, according to the institute. Labels show the number of square feet for each type of room a particular fan will ventilate.

Two booklets on home ventilation have been published by HVI to tie in with the new program. They are: 1) "Home Ventilation Guide," designed for the use of dealer-contractors, builders and

(Continued on page 28)

Two More Cities Offer Silver Shield Courses

KANSAS CITY, Mo. — Heating and air conditioning dealer-contractors of the greater Kansas City area met recently as the Gas Service Co. to hear details of the Silver Shield program sponsored by the National Warm Air Heating and Air Conditioning Association. Working with the national association in the presentation of the program was the Kansas City Silver Shield action committee consisting of Herbert Haase, Blue Valley Heating and Air Conditioning; Charles Doubleday, Doubleday Heating Co. (also president of the Sheet Metal and Heating Contractors Association of Kansas City); Clem Alexander, Johnson Furnace Co.; Ed Fox, Fox Furnace Co.; Jim Dukelow, Trough-Nichols, Inc. (also president of the Sheet Metal and Air Conditioning Contractors

Association of Greater Kansas City); Floyd Doubleday, Furnace Supply Co.; Clarence Schumacher, General Heating and Cooling; Paul E. Chamberlin, The Gas Service Co.; Clark Anderson, Kansas City Power and Light Co.; and Ralph A. Nicholas, executive secretary, Sheet Metal and Air Conditioning Contractors Association of Greater Kansas City.

A similar meeting was held for warm air heating and air conditioning dealer-contractors of the Burlington, N. C., area. Assisting in the presentation of the Burlington program were Wayne Mooneyham, Burlington Heating and Air Conditioning Co. and J. Orville Garrett, vice president and general manager of the Garrett Wholesale Distributors Co.

(More news on page 28)



*Delco announces
an outstanding
new opportunity...*

THE GM-DELCO KEY DEALER PLAN

With a complete new line of central heating and air conditioning systems, GM-Delco offers you the GM-Delco Key Dealer Plan—designed to help you get more sales in this huge market... and get more profits! Here are the principles of this new plan:

- 🔑 **General Motors-Delco name**—assures top flight engineering and a universally known reputation for Reliability.
- 🔑 **Direct Factory-Dealer Distribution**—with planned sales, advertising, training, and promotional aids.
- 🔑 **Limited number of dealers**—in each market, and only they can buy Delco equipment.
- 🔑 **Protected Pricing**—stable Pricing that permits dealer profits.
- 🔑 **Dealer Listings in national ads**—insure direct participation in dynamic advertising, at no cost to you.
- 🔑 **Complete Sales Building Plan**—of local advertising, prospecting, and selling to build sales.
- 🔑 **Over 200 models—plus accessories**—meet all needs.
- 🔑 **General Motors Group Insurance**—available to eligible dealers and their personnel.

GM Delco 365
CONDITIONAIR

There may still be a GM-Delco Franchise open in your area. For full information on the outstanding business opportunities in the GM-Delco Key Dealer Plan, fill out this coupon TODAY and mail to:

Delco Appliances Division, General Motors Corporation
Department 64, Warminster 1, New York

Please give me complete information on your GM-Delco Key Dealer Plan

Name _____

Title _____

Business Name _____

Street _____

City & Zone _____ State _____

A COMPLETE LINE OF FURNACES, BOILERS, AIR CONDITIONING, HEAT PUMPS AND WATER HEATERS TO MEET ALL YOUR REQUIREMENTS.

A "truism" is a statement that is accepted as the truth, because it is often repeated and generally appears to be so.

But it is not necessarily true!

The excellence of Moncrief Furnaces provided at their low price, for instance, certainly refutes ... "the higher the price/the better the furnace".

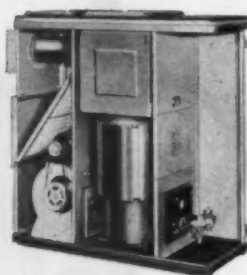
For, though it would be possible to require a higher price by adding unnecessary complications and gadgetry, there is no finer design and construction available today than in Moncrief Furnaces. These modern heating plants are heavy where they ought to be heavy ... in the heavy-gauge heat exchanger and extra-rigid cabinet ... while they are otherwise trim, compact, uncomplicated and trouble-free.



Factory Assembled and Wired Upflow Winter Air Conditioners ...
Gas: 75,000 — 200,000 Btu ...
Oil: 78,400 — 123,000 Btu assembled units.



Factory Assembled and Wired Counterflow Units ...
Gas: 75,000 — 150,000 Btu ...
Oil: 78,400 — 123,000 Btu assembled units.



Either Gas or Oil Fired Basement Type Winter Air Conditioners ...
Gas: 105,000 — 260,000 Btu ...
Oil: 84,000 — 224,000 Btu

TRUE OR FALSE?

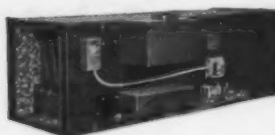
THE HIGHER THE PRICE / THE BETTER THE FURNACE

THE LOWER THE PRICE / THE CHEAPER THE FURNACE

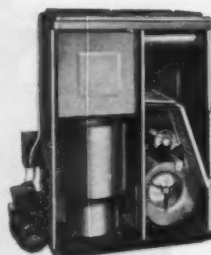
Backed by more than 65 years of manufacturing experience, superior Moncrief Furnaces are priced to compete with light-weight, shoddily constructed units. So, they also refute ... "the lower the price/the cheaper the furnace".

With Moncrief, the price is cheap but the qualities are excellent!

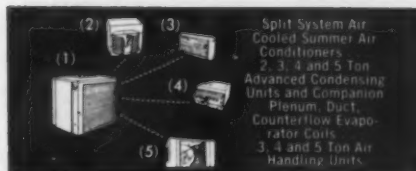
Wherever you are located, if you want excellent furnaces matched to your market and priced to stimulate new business, call your Moncrief Wholesaler now!



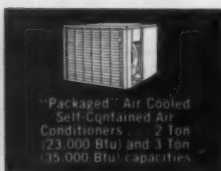
Factory Assembled and Wired Horizontal Furnaces ... Gas: 80,000 — 140,000 Btu ... Oil: 90,000 — 224,000 Btu assembled units.



Factory Assembled and Wired Oil Winter Air Conditioners ... 84,000 — 112,000 Btu ... Available with vestibule or exposed burner.



Split System Air Cooled Summer Air Conditioners 2, 3, 4 and 5 Ton Advanced Condensing Units and Companion Plenum, Duct, Counterflow Evaporator Coils, 3, 4 and 5 Ton Air Handling Units.



"Packaged" Air Cooled Self-Contained Air Conditioners ... 2 Ton (23,000 Btu) and 3 Ton (35,000 Btu) capacities.



Water Cooled Self-Contained Air Conditioners 3 and 5 Ton capacities.



Gas Fired Unit Heaters 5 capacities.



Gas Conversion Burners.

MONCRIEF

THE HENRY FURNACE

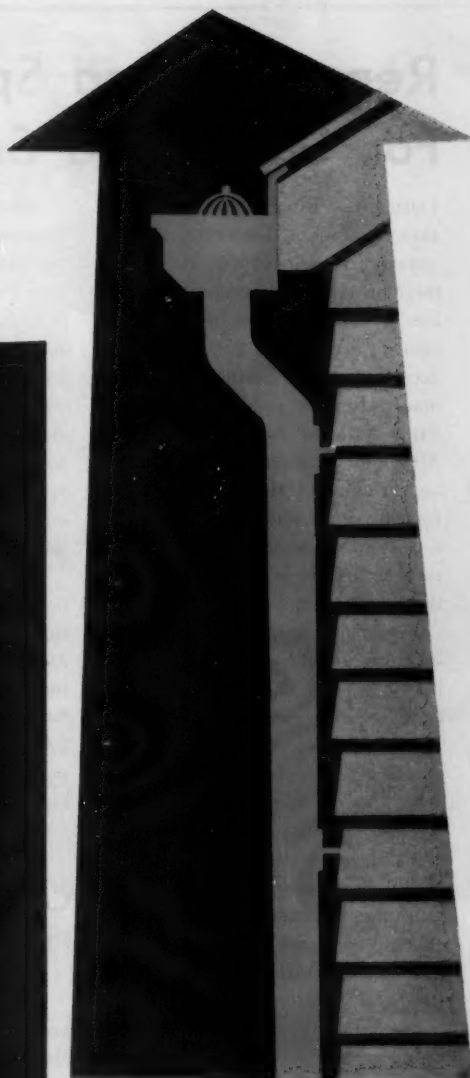
HEATING AND AIR CONDITIONING UNITS

MONCRIEF

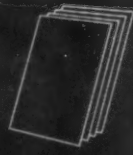
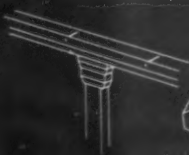
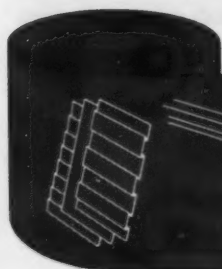
SINCE 1895

COMPANY • MEDINA, OHIO

FURNACE PIPE AND FITTINGS



LARGE
OR SMALL
HUSSEY
COPPER
DOES
THE
JOB
BEST!



WAREHOUSES Cleveland • Cincinnati
Chicago • New York (Long Island City)
Philadelphia • St. Louis



C. G. HUSSEY & COMPANY • PITTSBURGH 19, PA.

**DIVISION OF
COPPER RANGE COMPANY**



WHAT'S HAPPENING...

(Continued from page 24)

Report Record Spending For Goods and Services

CHICAGO — Final tabulations show that consumers, businessmen and governments in 1960 increased their purchases of goods and services by \$21.1 billion, or 4.4 percent, to a record of \$503.2 billion, according to the Business and Economic Review published by the First National Bank of Chicago. Although all sectors of the economy increased their outlays, the report points out, two categories — personal consumption expenditures and foreign trade — showed the greatest improvement.

Personal consumption expenditures increased by 4.6 percent during the year to \$328.2 billion. Two-thirds of this gain was the result of a \$9 billion rise in consumer purchases of services. Personal consumer buying of nondurable goods rose by \$4.9 billion while purchases of durable items increased by \$500 million over the 1959 figures. Consumer income rose more than expenditures and consequently the rate of personal savings during 1960 rose slightly.

Report Rise in Unitary Air Conditioner Sales

(Continued from page 21)

units covered in these reports represent more than 90 percent of the industry total.)

The shipment figures include unitary heat pumps, but do not include room air conditioners. Self-contained unitary heat pumps shipped during the nine-month period — 20,916 units — were 29 percent ahead of the 1959 period, ARI reports. Of heat pumps shipped, about 67 percent were self-contained, the report stated.

Government expenditures increased by 2.6 percent as outlays by state and local governments rose for the 17th consecutive year.

Private investment outlays rose only 1 percent in 1960 as increased business investment in plant and equipment more than offset a sharp cutback in business inventory buying and moderate declines in spending for residential building and farm construction and equipment.

Foreign trade provided the economy with significant support during the year as exports of goods and services rose to a level exceeding the previous record set in 1957. Sales abroad rose 15.7 percent to \$26.5 billion, while imports remained unchanged from the record high of 1959.

Certified Air Delivery Program Established

(Continued from page 24)

architects, which shows how to plan correct exhaust ventilation; and 2) "What Home Owners Should Know About Removing Odors, Smoke and Moisture from Their Homes," which is designed for consumer distribution.

OHI, NFC Boards Approve Merger

NEW YORK CITY — Directors of the National Fuel Oil Council and of the Oil Heat Institute of America have voted unanimous approval of a plan to merge the two organizations.

Plan Certification Of Room AC Units

NEW YORK CITY — Manufacturers of room air conditioners, through their section in the National Electrical Manufacturers Association, will launch a voluntary certification program under which they will certify the cooling and/or heating performance of their products to purchasers, starting with 1962 models, according to Joseph F. Miller, NEMA managing director. The certification will be based on models which have been tested and rated in accordance with NEMA Air Conditioner Standard CN1-1960. The testing will be under the supervision of Electrical Testing Laboratories Inc., New York City.

Gas Furnace Sales Second Only To '59 Total

NEW YORK CITY — The Gas Appliance Manufacturers Association reports that manufacturers shipped 899,700 gas-fired forced warm air and gravity furnaces during 1960. This total, according to GAMA, was exceeded only in 1959, when 1,053,400 furnaces were shipped.

Conversion burners shipped totaled 132,600 units, down 15.1 percent from 1959 shipments. Gas-fired water heaters reached a total of 2,661,500, down 9.9 percent.

Other 1960 totals for gas-fired equipment are as follows:

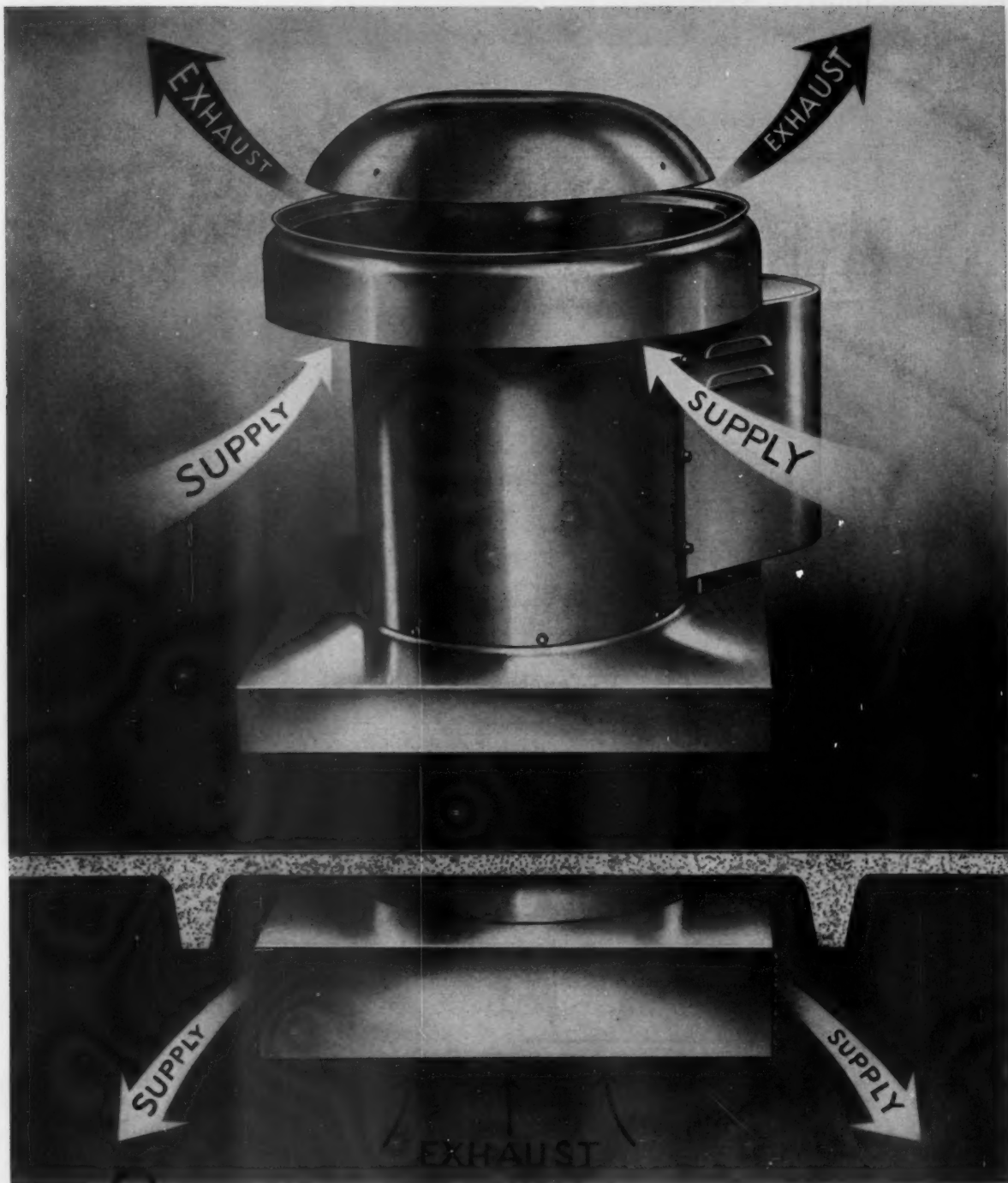
Floor furnaces — 86,700, down 10.9 percent from 1959.

Unit heaters — 138,900, up 0.9 percent over 1959.

Duct furnaces — 26,900, up 17 percent.

Incinerators — 42,000, down 4.1 percent.

(More news on page 34)



One impeller does it

You get both air supply and exhaust simultaneously with the new Clarage TWINALATOR*. Unique, superior dual function air handling for all types of buildings. Definite money-saving advantages: Requires only one opening, one motor, one drive, one starter. No make-up air unit neces-

sary. Applications unlimited — well adapted to closed or semi-closed systems. Can be provided with heating coils and filters. Write today for Bulletin 552. CLARAGE FAN COMPANY, Kalamazoo, Michigan. Clarage sales engineering offices are located in all principal cities.

*Patented
Trademark



WILLIAMSON

HAS QUITE A CASE!

THE WILLIAMSON COMPANY
3310 V15 Madison Road, Cincinnati 9, Ohio
That is quite a case! I'm interested.
Send information to me . . .

Name _____

Address _____

City _____ Zone _____ State _____

COPYRIGHT 1960, THE WILLIAMSON CO.

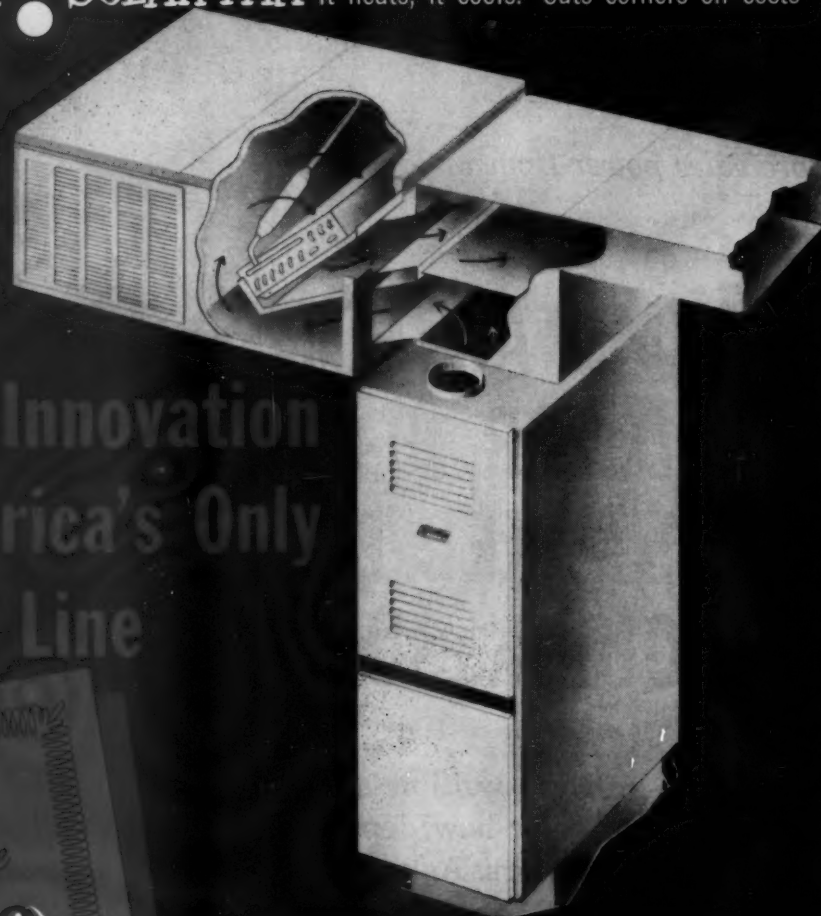
Another Williamson First

Actual *miniature* Seal-Tite® fittings — perfectly hand crafted . . . a remarkable new approach to clinch your heating or cooling sales at a greater profit!

Now you can take fittings into the home and demonstrate why your exclusive Seal-Tite air distribution system will do a far better job in providing home comfort. Here's just another exclusive reason for being a Williamson Dealer!

Send coupon for information or contact your local supplier

Coleman **POLAR**  **SOLAR PAK** It heats, it cools. Cuts corners on costs



Another Innovation
In America's Only
Bonded Line



SIMPLE . . . DIRECT . . . LOW-COST

So easy! Just short-couple a 2 or 3 h.p. Coleman Polar-Pak unit to a Coleman furnace and your customer has a Polar-Solar-Pak installation. Furnace blower only is needed for complete circulation of conditioned air—summer and winter. No refrigerant lines. No costly transition ducts. You can do the job at remarkably low cost.

Unlimited application—basement, slab, crawl-space, attic, tri-levels, apartment houses. Furnace and cooling unit each backed by Coleman's famous warranty bond. Ask your Coleman distributor or write

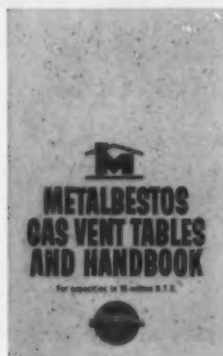
The Coleman Company, Inc.
Wichita 1, Kansas

Coleman builds the most complete and only bonded line of heating and air conditioning. Investigate!

More sales power from Metalbestos

NEW METALBESTOS QC IS RATED FOR 10-MILLION B.T.U. AND BACKED BY EXACT DATA FOR QUICK, SURE INSTALLATIONS

for the fast-growing multiple-story and commercial markets which demand technical know-how, dependable gas vent systems and minimum installation manhours. Ask your jobber salesman for all the details.



The new METALBESTOS GAS VENT TABLES and HANDBOOK

for sizing vents from 3" to 24" and for capacities to 10-million B.T.U. Available through Metalbestos distributors.



METALBESTOS DIVISION
WILLIAM WALLACE COMPANY
BELMONT, CALIFORNIA

MANUFACTURING PLANTS IN BELMONT, CALIFORNIA • LOSAN, OHIO



FAST* That's the kind of **service** everyone wants. It's promised universally... given seldom. Notable exception in the heating and air conditioning field: **Peerless Corporation**. When we promise delivery or service, **count on it**. Just like you can count on the quality of **Peerless** products.

PEERLESS CORPORATION 1853 Ludlow, Indianapolis, Indiana



*** NOW** 4 LOCATIONS TO BETTER SERVE THE GROWING FAMILY OF PEERLESS CUSTOMERS
INDIANAPOLIS, IND. | DOWAGIAC, MICH. | ATLANTA, GA. | TAMPA, FLA.

STANDARDIZE 100%
ON SOUTHERN
FASTENERS

Southern SPECIALIZES in



Standard Fasteners for METAL

Your best source for standard fasteners for the sheet metal business is your Southern Screw distributor. His stock of Southern's USA-made fasteners means a ready supply of clean-cutting, fast-driving fasteners for every requirement.

Order now from your Southern Screw distributor. And ask about Southern's new, free ACTUAL SIZE CHART for MACHINE SCREWS and TAPPING SCREWS — a valuable reference chart for shop or office. Available only through Southern distributors.

Manufacturing and Main Stock
in Statesville, North Carolina

Warehouses:

New York • Chicago • Dallas • Los Angeles

Tapping Screws • Machine Screws & Nuts •
Stove Bolts • Drive Screws • Carriage Bolts
• Continuous Threaded Studs • Wood Screws
Hanger Bolts • Dowel Screws



WHAT'S HAPPENING...

NWAHACA, FHA Confer on Silver Shield

CLEVELAND — James M. Martin and James D. Nolan of the National Warm Air Heating and Air Conditioning Association conferred recently with Neil Hardy, Federal Housing Administration, concerning arrangements for an additional allowance for Silver Shield heating or cooling systems. NWAHACA will work very closely with FHA in the coming months, according to Mr. Martin.

Manufacturers To Help Builders Sell More Homes

WASHINGTON, D.C. — Manufacturers and builders have joined forces to spur home buying, according to the National Association of Home Builders. Plans call for the joint program to be developed through three phases, with the initial phase being devoted to research to determine consumer buying habits and attitudes. From this study, creative appeals to spur the desire for new homes among the public are expected to be developed.

Phase two will consist of a marketing test program to determine the effectiveness of these appeals. Phase three would involve a national campaign based on the results of the first two phases.

Each phase will be a separate entity and the development of phases two and three will rest upon the wish of builders and manufacturers to go ahead with the program after the first phase is completed.



SWORDS OF DAMOCLES

Every editor of a businesspaper, like the King's courtier of Greek legend, lives with a sword of Damocles suspended over his head.

Some of them have it tougher—they live with thousands of them. One for each subscriber.

The under-one-sword editor has things a bit easier—his publisher holds the sword, and readers don't get much chance to use it. These are the papers whose recipients pay no subscription price, but get the publication more or less over the transom.

The paid circulation papers, on the other hand, give each subscriber the opportunity to drop the sword—and if too many of them do, things get pretty painful for the editor—and the publisher.

But the system has its compensations, too: this kind of editor has to be on his toes all the time. His publication has to be good—or else. So the advertiser using such a publication can be pretty sure its readers want it—and keep on expressing their approval year after year by renewing their subscriptions.

To find this kind of businesspaper in practically any field, simply look for this symbol:



The plus value of paid circulation is "wantedness"



SOMETHING

FOR YOU TO CROW ABOUT FROM

bryant

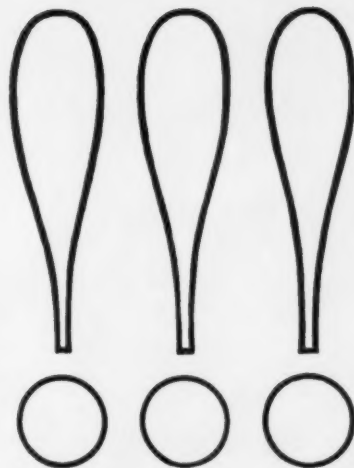
TWO NEW



395 SERIES Last word in a deluxe furnace for the better new home and replacement market.

393 SERIES Top-styling, Bryant quality and features in a furnace priced for low in-place cost.

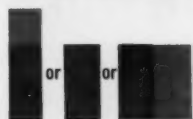
LINES



STYLED BY RAYMOND LOEWY... foremost American designer. Smart colors and design are combined in a manner that says "quality" at first glance. The "furnace" look is gone. These units sparkle with beauty that makes them easier than ever for you to sell at full margin.



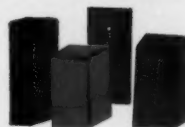
MORE JOBS WITH FEWER MODELS Bryant's unique 1961 design offers upflow, downflow and basement models in both the 393 and 395 series. By use of counterflow and drop duct kits, Bryant's basic furnace will meet any of these applications. More flexible local stocks mean faster delivery to your job.



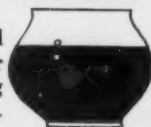
NEW "MORE FOR THE MONEY" VALUE Bryant, always tops in quality and features that appeal to customers, now puts you in a better pricing position than ever before.



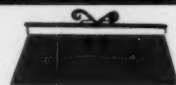
NEW COMPLETE LINE You can sell both the "price" buyer and the man who wants to "go deluxe". Series 393 and 395 have no "gaps" in the line. You can size to the job. Series 393, 80,000 Btu to 150,000 Btu; Series 395, 80,000 Btu to 400,000 Btu.



NEW QUIETNESS Bryant's big, powerful blower is very quiet, and is designed to handle the volume of air required by summer cooling. Other features include the rigid, one-piece welded casing and Bryant's fuel-saving burner that splits the fire to "scrub" the sidewalls of the heat exchanger.

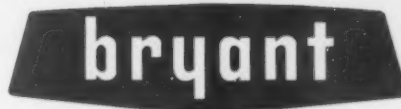


FLEXIBLE FINANCING to fit your own and your customers' needs.



...AND THAT ISN'T ALL. FOR THE FULL STORY ON THE NEW BRYANT PROPOSITION

call our local distributor or factory branch.



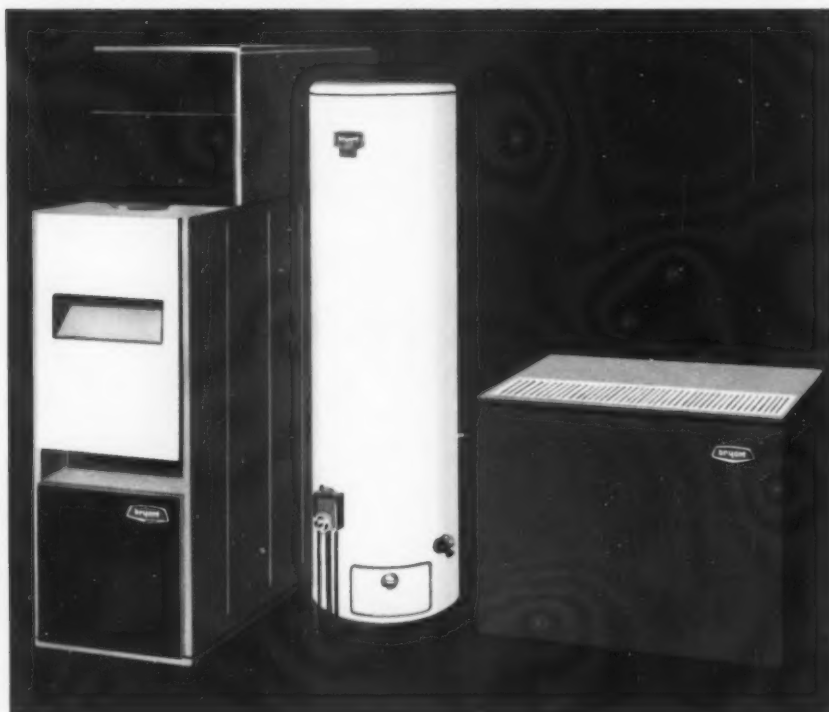
BRYANT MANUFACTURING COMPANY
Indianapolis 7, Indiana



NEW IDEA

TO HELP YOU MAKE 3 SALES INSTEAD OF 1

BRYANT HOME COMFORT CORE



The Bryant Home Comfort Core is an easy way to get prospects to think in terms of buying complete year 'round comfort instead of a single piece of equipment. It combines an air conditioner, a furnace and a water heater.

It is a lot easier to sell two or three related products at a time than you may think. Dealers tell us that 3 out of 5 air conditioning buyers are pushovers for a new furnace.

Builders *have* to include a furnace and water heater. Smart builders—north and south—are now including air conditioning **TO HELP SELL HOMES.**

With the Bryant Home Comfort Core you can offer them the whole package and with it one of the most sensible, down-to-earth new home merchandising programs you've ever seen. It's flexible enough to fit both small and large builders.

12 REASONS WHY DEALERS LIKE BRYANT

1. A MOST COMPLETE LINE of products and range of prices to fit your market.
2. SALES AND SERVICE HELP from nearby distributor or factory branch.
3. FAST DELIVERY from local stocks.
4. EXCLUSIVE FEATURES make selling easier.
5. NATIONAL REPUTATION helps you sell.
6. LOCAL ADVERTISING with factory and distributor help.
7. STABLE SALES POLICIES that protect you.
8. SOUND SALES and technical training.
9. BUSINESS MANAGEMENT aid helps you keep profits.
10. BRYANT'S financial strength.
11. LIBERAL FINANCING and credit tailored for you.
12. GAS AIR CONDITIONING.

Ask your Bryant distributor or factory branch about how the Bryant Home Comfort Core and its merchandising plan will help you do extra—and profitable—business.

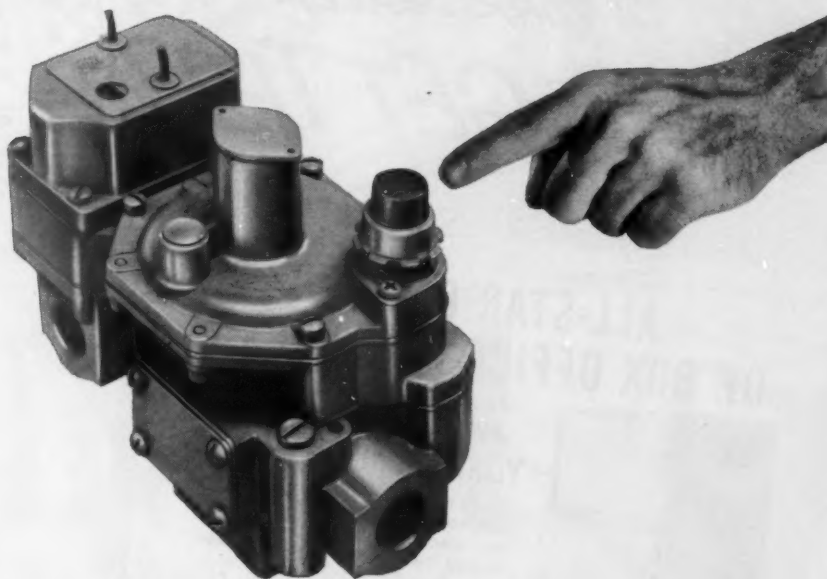
BRYANT MANUFACTURING CO.
Indianapolis 7, Indiana

Join up with Bryant

bryant

the company on the move!!!!!!

Good pointers to follow for easier installation...trouble-free comfort



NEW SERIES 5250 GAS CONTROL



NEW MODEL 188 THERMOSTAT *



Replacement is a snap with the A-P Series 5250 gas control valve — choice of three outlets makes installation as easy as 1-2-3. Whether a unit requires a straight-thru, left-hand or right-hand outlet, the 5250 gives you an easy out. Pipe sizes available — $\frac{1}{2}$ " x $\frac{1}{2}$ " and $\frac{3}{4}$ " x $\frac{3}{4}$ ". Packed with sell too! Features include built-in pressure regulator, 100% safe shutoff, safe lighting, thermostat* and thermomagnetic safety pilot. For all equipment in the 60,000 to 188,000-Btu class. For complete data, write for Bulletin GC109.

*Never underestimate the power of a thermostat to sell heating equipment, especially if it's a new A-P Model 188. This beige beauty will complement any decor. Easy to install too! Simple mounting bracket requires only two screws. No leveling is needed. Switch is snap-action type. Vibration won't cause contacts to flutter.



Creative Controls for industry

CONTROLS COMPANY OF AMERICA

HEATING AND AIR CONDITIONING DIVISION

2452 N. 32nd Street, Milwaukee 10, Wisconsin • Cooksville, Ontario • Zug, Switzerland

HAC-25-60

YOU'VE GOT TO BE
A YORK DEALER

TO GET THE

TOP

**ALL-STAR CAST
OF BOX OFFICE FAVORITES**

FOR EVERY RESIDENTIAL
AIR CONDITIONING NEED!

YORK COMFORT CENTER

Cools and dehumidifies in the summer, heats and humidifies in the winter, electronically filters all year 'round! Twin-system cooling. Gas-fired. Dual-flame burners for more efficient heating.



YORK CHAMPION

Low-cost, single-system add-on unit.
Air cooled. Remote heat exhaust.



YORK PATHFINDER

Single and twin-system models that fit in attic, crawl space, or through the wall. Self-contained. Air cooled. Can utilize existing warm air ductwork. Also available in heat-pump models.



YORK TWINLINE

Two cooling systems save up to 15% on operating costs. Only cooling coils are inside furnace ducts. Heat exhaust section is installed outside.



BONANZA IN '61!

TOP PERFORMANCE BONANZA! Every York Residential Air Conditioner is subjected to the most rigorous testing—by the most advanced testing facilities in the industry!

TOP PROFIT BONANZA! You sell at a competitive price and cash in on higher mark-ups, too!

TOP ADVERTISING BONANZA! York's nationwide advertising campaign with powerful local tie-in support gives you the biggest drawing card in air conditioning!

TOP FRANCHISE BONANZA! The York Franchise is a Blue Chip Franchise—a prestige franchise with a reputation for integrity unsurpassed in the air conditioning industry!

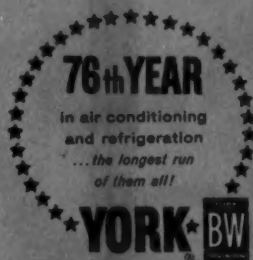
HIT THE BIG TIME! GET YOUR FULL SHARE OF TOP DOLLARS FROM THE LINE WITH THE GREATEST POTENTIAL IN RESIDENTIAL AIR CONDITIONING!

The stage is set . . . the stars are ready . . . and the curtain is up on the greatest sales show of them all. A show with outstanding performers in every role—and a sales program calculated to bring the Top Bonanza in the air conditioning world home to every York Dealer's store! So get set now—for a banner year and . . .

SEE YOUR YORK DISTRIBUTOR—THE MAN WITH THE TOP BONANZA!

YORK

RESIDENTIAL AIR CONDITIONERS

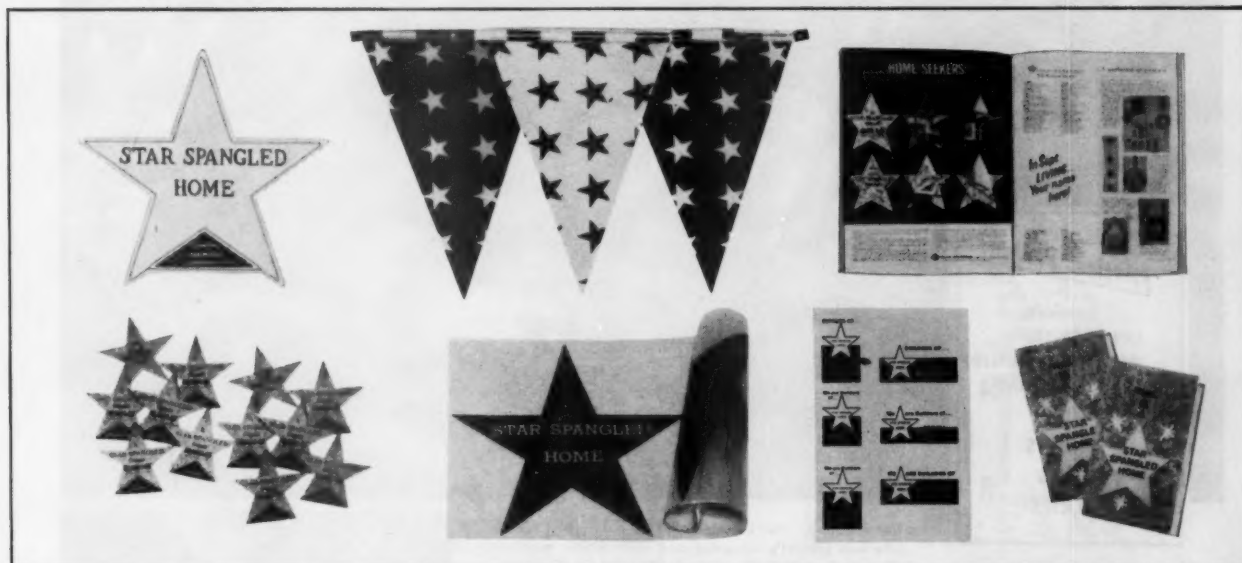


YORK CORP., SUBSIDIARY
OF BORG-WARNER CORP.
SOUTH BRANTLEY RD.
YORK, PA.

**MR. SHEET METAL CONTRACTOR...YOU
ARE THE KEY MAN IN**



Now you can offer builders a real home-selling idea...and get that sheet metal contract



Amazing—it's easy—and it costs you absolutely nothing! All you have to do is tell your builder friends about this big Inland STAR SPANGLED HOMES PROMOTION, and it can be the "plus" that gets you the contract. No investment by the builder either. All he has to do is tell you he wants Inland TI-CO and he gets all the sales-stimulating benefits, positively free.

- A set of 30 paper stars, to identify Inland TI-CO in the home, and to tie in his own "hidden value" features
- Two strings of star-spangled, red, white and blue pennants
- A star-spangled mat for the doorstep
- A mounted and easled preprint of the national advertisement in "Living for Young Homemakers" magazine.
- 6 ad mats to tie his local advertising in with nationally advertised promotion

- 500 star-spangled brochures, with space for his name, to be used as give-aways to prospective home buyers... all Free of charge to you and the builder!

Your presentation folder contains everything you need to tell the story to your builders—helps get the sheet metal contract. It means more business for you because only contractors who supply Inland TI-CO galvanized steel can offer the free promotion kit to builders

Here's how it works:

1. Inland provides you with a Presentation Folder to help you tell your story to builders.
2. You furnish the builder with a complete Star-Spangled Homes Promotion Kit at no cost to him. Inland Steel Company provides the Kits—they cost you nothing.
3. You get the sheet metal contract and use INLAND TI-CO Galvanized Steel in the ductwork and on gutters and downspouts—finest galvanized steel on the market.

The Builder's model home Promotion Kit contains:

- Vacuum-formed "Star-Spangled Homes" star, to hang on the door of the model home

Get complete information quick—mail this coupon today...

INLAND STEEL COMPANY

30 West Monroe Street, Chicago 3, Illinois
Dept. 12



I want to use the STAR SPANGLED HOMES PROMOTION to help me get more Sheet Metal Contracts.

Here is the name of my Steel Service Center or Wholesaler who will provide Presentation Folders for my _____ salesmen:
(quantity)

Their address is _____

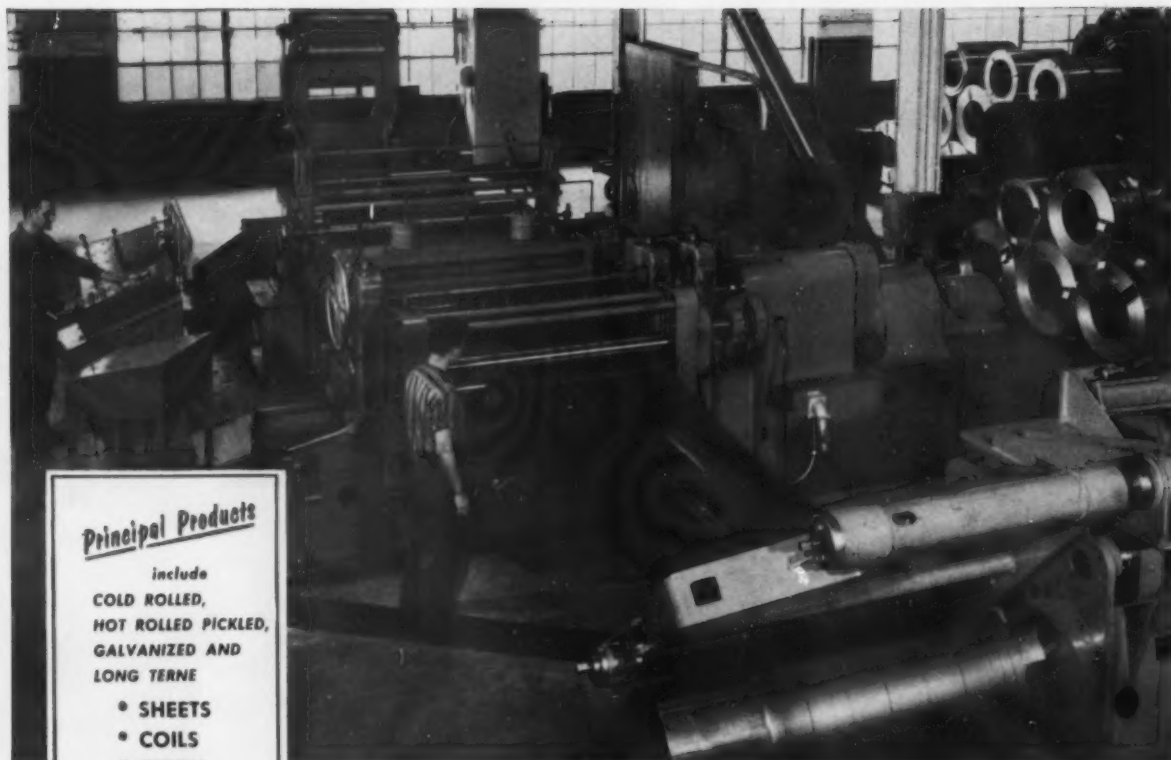
_____ City _____ Zone _____ State _____

MY NAME: _____

MY COMPANY NAME: _____

MY ADDRESS: _____

CITY _____ ZONE _____ STATE _____



Principal Products

include
COLD ROLLED,
HOT ROLLED PICKLED,
GALVANIZED AND
LONG TERNE

- SHEETS
- COILS
- STRIPS

Just installed — this custom-built heavy-duty 60" Slitting Line was specially designed and built to our specifications. It is electrically controlled at a central console.

... Cut Production Costs by using GREAT WESTERN STEEL Processing Facilities



Steel is carefully packaged for good, clean delivery.

Take a fresh look at your manufacturing costs! Chances are that Great Western Steel can offer you a lot of cost-cutting possibilities in preparing steel to your exact specifications for fast integration into your production lines.

Whether it's accurate SHEARING to size . . . Precision SLITTING to exact tolerance . . . EDGING full round or deburred edge . . . CORRUGATING or ROLLER LEVELING, our men . . .

specialists in steel . . . are equipped with modern efficient processing facilities to give you precisely what you need, when you want it.

Remember this too, everything you need in SHEETS, STRIPS and PLATES is just a quick phone call away. Tell us what you need and we'll get it to you in a hurry!



**GREAT WESTERN
STEEL COMPANY**

ESTABLISHED 1918

CHICAGO Call HEmlock 4-5800
MILWAUKEE Call HI ltop 4-3092

General Office and Plant:
2300 W. 58th St., Chicago 36, Illinois
Milwaukee Office and Plant: 2475 W. Hampton Ave.
REPRESENTATIVES IN PRINCIPAL MIDWESTERN CITIES

ALCO

offers the
FIRST and ONLY
Silica-Gel P.A. 400
and Molecular Sieve

**BLOCK DESICCANT
FILTER-DRIER**

to the
**REFRIGERATION
INDUSTRY**



Mr. A. D. K. says:
**To Protect the
System and
Yourself
use the**

**A
ALCO
DK
DRI-KLEANER**



Important Advantages and System Benefits:

- 1.** Exclusive Alco binder assures a block of 97% pure desiccant.
- 2.** Manufactured by Alco's specially developed forming process (not pressure moulded)—eliminating packing effect—assuring greater uniformity of flow.
- 3.** Geometry of ADK block exposes maximum surface to adsorb and filter out moisture and fine particles.
- 4.** Directed and even distribution of liquid gives filtration in depth—coupled with short flow path means low pressure drop—longer system life.

- 5.** Rigidly controlled activation—factory sealed.
- 6.** Maximum system protection against acids and other foreign matter.
- 7.** Copper (ODS) fittings mean easy brazing.
- 8.** Brass (SAE) fittings means no flare nut creep.
- 9.** Full flow fittings mean low pressure drop.

ALCO DRI-KLEANER is your insurance for a longer, more trouble-free system life.



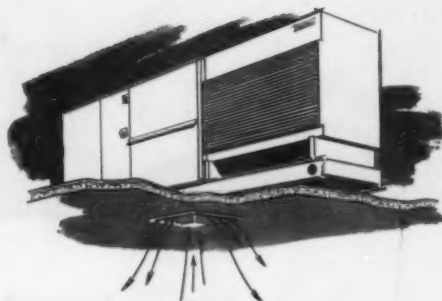
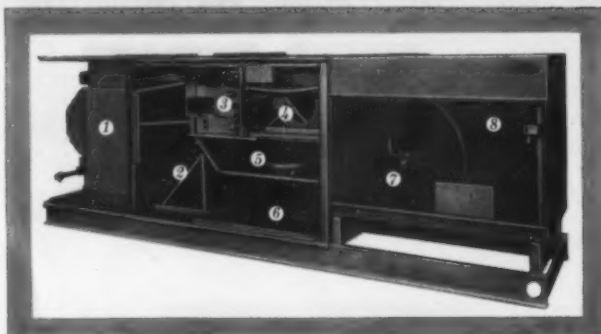
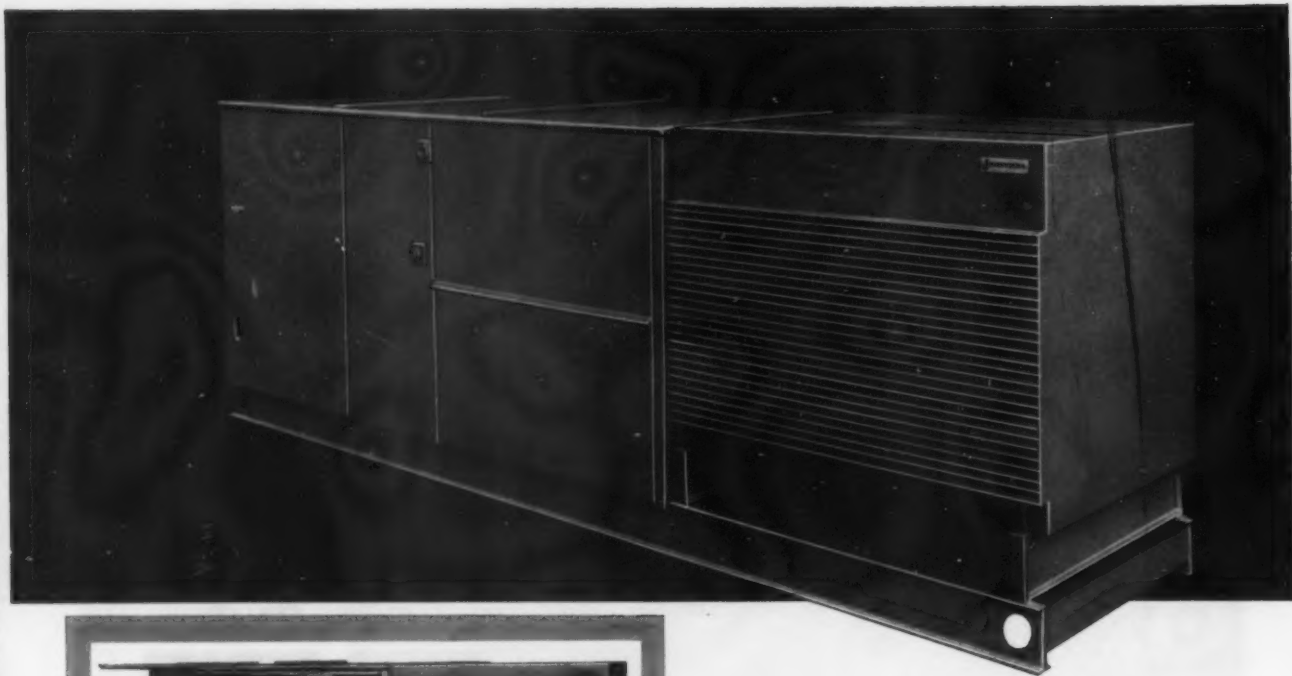
- **BUY SECURITY**
- **BUY QUALITY**
- **BUY ALCO**

8328

ALCO VALVE CO.

144 KINGLAND AVE. • ST. LOUIS 30, MO.

The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors • Solenoid Valves
Refrigerant Filter-Driers • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves



SKYLINER FEATURES

- 1 **Armor-coated heating section**—gas-fired, two-pass, heavy-duty type, with all joints and surfaces coated, inside and out, with fire-fused A-19 corrosion resistant ceramic coating. A.G.A. approved.
- 2 **Cooling evaporator coil**—aluminum finned-copper tube type for peak performance. Located downstream of heating unit, adjacent to outlet.
- 3 **Factory-wired electrical panel**—standardized and tested to simplify installation and eliminate costly trouble-shooting.
- 4 **Permanently lubricated blower assembly**—heavy-duty, lube-packed, sealed ball bearings in blower and motor eliminate need for periodic lubrication service.
- 5 **Fresh air inlet**—provides for blending of filtered make-up air with return air. Adjustable up to $\frac{1}{3}$ of total volume.
- 6 **Conditioned air outlet**—connects directly to a short, pre-insulated combination supply-return duct. There are no transmission losses.

- 7 **Quality Compressor**—operates up to 125°F. outside temperatures. Standard Tecumseh or Copeland, easily serviced or replaced in any section of the country.
- 8 **Oversize Condensing Coil**—the larger area dissipates more heat to provide greater cooling efficiency.

TECHNICAL INFORMATION SERVICE

Detailed information and product specification sheets on the Skyliner may be obtained from your local Janitrol representative or by writing the factory. There's no obligation, so why not bring your files up to date?

JANITROL®

NEW ROOF TOP HEATING-COOLING SYSTEM HAS BROAD COST & COMFORT ADVANTAGES *for single story buildings*



SKYLINER *by* **JANITROL**

**DOESN'T USE INSIDE SPACE...ELIMINATES DUCT SYSTEM...ALLOWS
REDUCTION IN BUILDING HEIGHT...INSTALLS FAST WITH LESS LABOR**

Whether you should specify the Janitrol Skyliner depends on the job, of course. But if the budget is tight, and you're looking for ways to chop costs without penalizing quality, by all means consider the Skyliner.

Shipped completely factory assembled, tested and ready for installation on the roof, the Skyliner "package" provides *really* economical heating, cooling or year 'round conditioning. Conditioned air is circulated through a ceiling diffuser (located beneath the unit) in the conditioned area. No duct system is needed . . . total building height can be reduced. It has an unobtrusive, low silhouette . . . no stack is required . . . flue gas exhauster is furnished. And not a single cubic foot

of usable inside space is used by the Skyliner system!

One or more Skyliner units may be used to provide a simple, efficient zone-controlled comfort system, with each Skyliner controlled by its individual thermostat. A wide range of capacities is offered to match the needs of each zone.

The Skyliner is completely enclosed in a weatherproof, insulated, aluminumized steel cabinet. The unit has been operationally tested in 60 m.p.h. winds and for two hours at 12-inch/hr. rainfall. No water or sewage service, no refrigerant piping or charging and no complicated electrical wiring are required. All important factors in cutting costs and speeding up installation!

Here are Some Points to Remember about the Janitrol Skyliner

Multiple Unit Zone Control Type—You can have an individually sized and controlled unit for each occupancy area. Each unit operates only for its own zone, without standby or transmission losses. Multiple units assure continuity of service, since the shut down of a single unit for service or maintenance will not affect performance of other units.

Low Installed System Cost—A Skyliner packaged system offers substantial savings over a conventional site-fabricated central system by:

- Elimination of equipment room.
- Elimination of duct system.
- Elimination of wiring, assembly, installation and checking of individual system components.
- Elimination of water or sewage service.

Meets or exceeds national standards—All Skyliner units carry the certification seal for capacity and performance according to the rigid standards of the Air-Conditioning and Refrigeration Institute. Components are listed by Underwriters' Laboratory and the American Gas Association.

Leasing Plan to Save Capital Investment—A complete Skyliner system can be leased on a long-term basis. Permits owners to keep their working capital working.

HEATING & AIR CONDITIONING

**A DIVISION OF MIDLAND-ROSS CORPORATION, COLUMBUS 16, OHIO
IN CANADA: MOFFATS LTD., TORONTO 15**





Slam!

Sammy Snead failed
to flake it



Smack!

Billy Pierce failed
to flake it

Scoop!

All 20
Ryerson plants now stock
Inland TI-CO[®] galvanized sheet

Get it from Ryerson—the galvanized sheet that simply won't peel or flake. It's tough, firm, yet soft enough to take the most complicated forming—Pittsburgh lock-seaming or any other tough fabricating process—without difficulty and without make-overs.

And when you hammer it flat, TI-CO won't spring back—it *stays* flat. You get a good-looking,

long-lasting installation—every time.

Now, wherever you are, Ryerson can supply TI-CO Galvanized Sheet in the quantities, gauges and sizes you need—it's stocked at all 20 modern Ryerson plants. Call today.

RYERSON

JOSEPH T. RYERSON & SON, INC., MEMBER OF THE INLAND STEEL FAMILY



PLUS VALUES IN STEEL • ALUMINUM • PLASTICS • MACHINERY

Where to Look for Prospects

WHERE ARE THE PRIME PROSPECTS

for your service this year? According to several sources of information, the modernization field offers an excellent potential. One source, the United States Department of Commerce, states: "Of great importance to warm air furnace manufacturers (and, therefore, for dealer-contractors—Ed.), is the volume of replacement and modernization of existing houses. Outlays for these purposes are expected to increase in 1961."



Some dealer-contractors who have depended upon the new house market for the bulk of their business, have shown too little interest in the past in the tremendous replacement and modernization market. Such dealer-contractors may well profit by acquainting themselves with the techniques employed by those who have specialized in this field. If specific information on this phase of the business is desired, write us about the 60 page Modernization Guide available.

Dealer-contractors seeking to enter the modernization field should first determine the area which they estimate to be the most productive in sales, and concentrate their promotion efforts on those prospects with the best potential.

Several organizations, recognizing the opportunities offered by the home remodeling and modernization business, have conducted surveys to determine those prospects that offer the best potential for a dealer-contractor seeking to increase his sales volume.

One such survey was recently undertaken by the Chicago Tribune research department, which completed a study of 2956 metropolitan households. This survey was made through personal interviews with heads of households.

When buying patterns were analyzed from the standpoint of occupation, the study showed heaviest buying was centered in professional groups first, then management, and third in skilled white collar groups. As might be expected, family income is a dominant factor in distinguishing between buyers and non-buyers. Thus, it would seem that those who analyze their markets carefully would be able to concentrate their promotion to influence the most productive list of prospects.

Sources of information which can be used by dealer-contractors are available from the local chamber of commerce, newspapers, radio stations and, in some cities, private marketing firms. Costs involved in obtaining accurate market information is a good investment because it cuts out the wastage that occurs when indiscriminate promotion programs are used.

Now Is The Time To

**... in the residential summer
air conditioning field,
as an American Artisan survey points
the finger
at areas of possible litigation**

IT'S BEEN SAID for many years that "an ounce of prevention is worth a pound of cure." This point of view is one that can be profitably used by the warm air heating and air conditioning industry to head off possible restrictions that could have an effect on the sale of residential equipment. In fact, restrictions in the form of city ordinances are now in force in some communities, and are under consideration by city councils in others.

City ordinances have been or are

being considered due to noise created by air cooled condensing units and water cooling towers located outside of the air conditioned buildings. Regulations controlling the location and installation of air handling equipment for condensing purposes are now in effect in Phoenix, Ariz.; Dallas, Tex.; Beverly Hills, Calif. Interest is growing for regulations in many communities further north.

In Shaker Heights, Ohio, during 1960, an ordinance was proposed

after a study by the building commissioner and a committee consisting of two physicists and representatives of the air conditioning industry. The proposal for the ordinance was taken under advisement by the city council, which returned it with recommendations for further study. A revised ordinance will be introduced this year.

Community interest in curbing noise due to condensing unit operation is growing, as the number of air cooled equipment installations grows each year. In 1952, when about 12,000 residential summer air conditioning installations were made, noise problems and complaints from neighbors were few and far between. The reason being that about 90 percent were water cooled units, using water from city mains and discharging the waste into a sewer.



A SOLID 4 IN. THICK concrete slab, located clear of the building foundation, is the method recommended by a 3 to 1 majority as the best way to install a remote air cooled condensing unit

Head Off Future Noise Trouble

A Serious Community Problem

One respondent to American Artisan's survey said, "While there has not been any legal action locally, it is without doubt a very serious problem, and one which all communities will necessarily face if proper steps are not taken in the very near future."

This picture had changed considerably by 1960, when over 225,000 installations were made. About 90 percent of the 1960 installations used remote air cooled condensing units or water cooling towers.

Noise Complaints Growing

Neighbor complaints of excessive noise to city building commissioners have shown a steady growth. The result being that more attention is being paid to the reason for the complaints, hoping to remove the cause or causes.

Should it become necessary for dealer-contractors to comply with strict code specifications in meeting the noise problem, the expected growth of the residential summer air conditioning field might be curtailed. Thus it would seem to be to the best interests of the industry — manufacturer, wholesaler, and dealer-contractor — to exercise great care in the construction and installation of equipment.

To determine the cause — and through the cause, the cure — of objectionable noise levels, American Artisan has recently completed

a survey of 50 major metropolitan areas, at both the dealer-contractor and wholesaler levels. The survey covered communities from coast to coast and from border to border. Respondents to the survey were asked to indicate their experience with pertinent and related causes of noise. Dealer-contractor and wholesaler reports tend to agree as to the basic causes for objectionable noise, and these opinions definitely point to areas where efforts could be made, by those segments of the industry responsible, to determine the causes and eliminate them.

One of the places where immediate attention should be given is in the construction of condensing unit cabinets to provide better acoustical treatment of air movement and mechanical equipment noise. A question in the survey conducted by American Artisan on this subject, as answered by dealer-contractors, indicated overwhelmingly (15 to 1) that this problem is of prime importance. Wholesalers also gave high priority to the solving of this problem (their answers were 5 to 1 in favor of immediate attention).

One respondent added this comment, "It is my conviction that the use of more sound absorption material — or better material — would result in a significant progress against overall noise problems."

Which Fan is Noisiest?

Another question in the survey dealt with noise as related to the type of centrifugal blower or propeller fan used. Dealer-contractors indicated 7 to 1 that the propeller fan was responsible for more noise complaints than were centrifugal

Noise Retards Sales

Another respondent to the survey said, "There are many cases on record of prospects desiring air conditioning, but who are reluctant to purchase it due to a previous unhappy experience with the noise problem."

continued . . .



FIELD INVESTIGATIONS reveal "as installed" conditions and help to identify contributing factors for objectionable noise. Evaluation of collected data provides clues to solving these problems

Future A C Sales Depend On Quiet Operation



LABORATORY RESEARCH can separate various types of noise from an aggregation of noise and help to trace to its source, the cause for the objectionable noise

blowers. Wholesalers indicated a 3 to 1 preference for the centrifugal blower.

Several wholesalers explained their point of view on this subject by indicating that reported noise complaints due to centrifugal blowers resulted from operating the blowers at speeds higher than those recommended by the blower manufacturer; this source of noise, they felt, could be eliminated if equipment is selected according to capacity tables published by blower manufacturers.

Compressor Hum a Problem?

A third question dealing with sources of noise origin asked about compressor vibration and hum. Dealer-contractors said (3 to 1) and wholesalers (5½ to 1) that compressor noise is too high, and

that compressor manufacturers could redesign their products to reduce this noise source.

Dealer-contractors (6 to 1) and wholesalers (3 to 1) felt that top condenser discharge openings resulted in less noise. They were about evenly split on the effect of cabinet and equipment deterioration due to increased exposure to weather. The survey showed that both dealer-contractors and wholesalers felt top discharge units resulted in greater deterioration. The tabulation scored $1\frac{1}{2}$ to 1.

Another question asked in the survey dealt with the method used to prevent noise transmission between the compressor-motor unit and condensing unit base. The answers received showed a 3 to 1 favor for the current practices being used.

Need New Grille Design?

Discharge air grilles for air cooled condensing units have often been blamed as a source of noise complaints. Answers received indicate 4 to 3 that current grille construction and methods of attaching are satisfactory. (*Editor's note:*

Noise Ordinances May Be Too Strict

A comment from a dealer-contractor expressed his concern over the possibility of too many restrictions if noise isn't properly controlled by the industry. He said, "There is no doubt in my mind that the entire industry will suffer, not only from the black eye of being associated with a nuisance (noise), but resultant legal restrictions may be so severe that many unnecessary dollars will be spent to conform with enacted ordinances."

When some opinions run this close to being equally split as to the cause of noise complaints, it would indicate that some consideration should be given this problem at the engineering design and development level.)

Frames and braces as noise sources were also surveyed. The tabulation shows an equal opinion by both dealer-contractors and wholesalers — 1 to 1 — that methods currently being used are adequate in keeping noise within desirable limits.

When questioned about the adequacy of the gage metal used for casings and its contribution to noise problems, the vote was 2 to 1,

at both the dealer-contractor and wholesaler level, in favor of continuing with the thicknesses being used in current models.

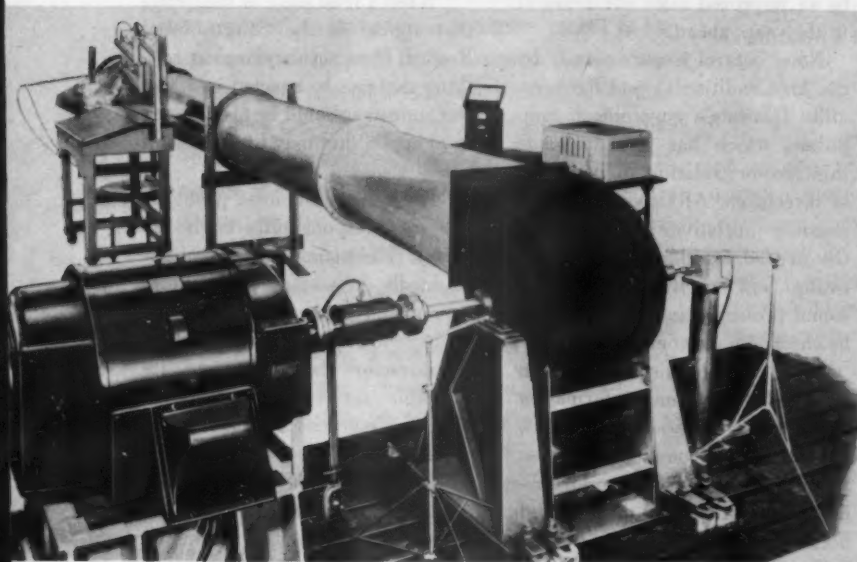
Survey's Scope Extended

While seeking answers to noise problems encountered in the field was the main objective of the survey, the editors of American Artisan also asked for other points of view on performance, installation practices, servicing, and parts replacement. The answers to these questions point out directions that can be taken to contribute to an overall healthy growth of the summer air conditioning industry. As to performance efficiency of centrifugal blowers and propeller fans, the survey shows 2 to 1 that respondents believe performance can be equally efficient with either type if selection is made according to manufacturer's capacity tables.

Opinions of dealer-contractors showed 6 to 1 and of wholesalers $3\frac{1}{2}$ to 1 that air cooled condensing units produce their rated capacities under design conditions.

Service Accessibility OK

Tabulation of the answers to a question dealing with accessibility for servicing of air cooled condensing units showed that sufficient consideration has been given this desirable detail. Adequate accessibility was stated by dealer-contractors (2 to 1), whereas wholesalers indicated equal opinions be-



NEW INFORMATION about residential size centrifugal blower and propeller fans used for remote air cooled condensing units will help in reducing the source of air movement noise

continued . . .



INVESTIGATIONS of vibration noise will provide corrective measures to reduce this source of prospect objection

tween adequate and inadequate (1 to 1). However, a number of answers equal to both the pros and cons, answered a third choice to the question of accessibility. This choice maintained: Satisfactory, but could be improved upon.

Installation practices that contribute to noise transmission were also investigated. One of the questions dealt with the use of condensing unit foundations. There was a 3 to 1 majority in favor of solid 4 in. concrete slab foundations. The minority favored a heavier concrete slab — one 6 in. thick.

Parts Speed-up Needed

Sales of summer air conditioning often rest on the voiced opinions of homeowners who already have central summer air conditioning in their homes. Thus, good customer relations depend upon the promptness with which a piece of equipment is restored to operation. From a total industry point of view, the accurate and prompt filling of orders for repair parts is an essential part of good customer relations. A question in the survey

Evenly Split Opinions Show Investigation Needed

asked if manufacturers handled repair part orders promptly and accurately. The answers indicate by 3 to 2 that this service is not satisfactory. 60 percent of the respondents indicated that delays were in excess of 5 days, and that customers become most unhappy when they are without their air conditioning equipment for even short periods during the height of the cooling season.

Field Experience Valuable

A careful analysis of the answers given by those with field experience will help the entire industry evaluate its current practices, make the necessary changes, and move to an improved sales environment in the years ahead.

Noise control is under study by the Air-Conditioning and Refrigeration Institute's government committee, which has already made this recommendation to its board of directors: "ARI should take all possible initiative in developing the needed standards for testing, rating, and specifying equipment sound pressures and how they can be checked under field conditions."

Next month, American Artisan will publish additional information on efforts to solve noise problems.

Some of the comments of those answering the survey are particularly interesting and are quoted here:

"In Dallas, units may not be located in side yards unless there is at least 10 percent of the lot

width between the unit and the property line."

"We would like better equipment, even if it carries a higher price."

"We are suffering with service problems and so are customers."

"The city of Phoenix has an ordinance regarding air from condensing units. We design special air deflecting equipment to meet the minimum requirements of the city code."

"I have had bad experience with noise being carried by wood floors over a crawlspace. It has formed a reverberating box."

"A recently enacted ordinance on noise in Beverly Hills charges the police department with enforcement."

"When I read some of the things that appear in the Congressional Record, I am not surprised at anything that can be enacted into law. Our industry should be alert to any legal action that may limit its sales potentials."

"The solving of noise problems is a joint responsibility of the industry. The manufacturer can undoubtedly do a better job of noise suppression as he manufactures his equipment. And the installing dealer-contractor should become responsible for applying his own noise and vibration reduction techniques."

"I am afraid that proposed code requirements will retard sales."

"There is no logical reason for this noise problem."

"Noise is usually due to a coincidence of factors."

the science of selling



THE SUCCESS AND GROWTH of every industry depends on its ability to create a desire for the products and services it offers. The responsibility for this motivation falls upon the industry's sales force, who must see to it that sales grow not only in volume but also in quality; that is, they must represent an exchange of maximum benefit to the customers for a fair profit to the business. This exchange permits — and also requires — the business to improve its operation constantly to serve future customers better.

To fulfill this obligation, salesmen must be able to recognize the needs of prospective customers quickly, and then produce logical recommendations for meeting these needs. Thus, training new salesmen and improving sales forces is a continuing task of management.

This series of articles presents some new information and some refinements of established sales methods which will be useful in sales training programs.

If the sales staff is small, route the magazine to each salesman before filing it.

If the sales staff is large enough to warrant weekly sales meetings, use each article as the basis for a continuing training program.

Wholesalers and manufacturers can assist dealer-contractors and their salesmen by building more formal sales training programs around this series.

Seven Sources for Sales Leads

Operate an "information center" for customers and they'll pay for your service in prospects

LAST MONTH'S ARTICLE in this series outlined the value of building a reputation among your customers as a source to get answers to problems they seldom have occasion to solve. Answers to questions such as: "Who is a good electrician I can call?" or, "What is the name of a reliable interior decorator?"

Providing information of this type, plus similar services, often causes customers to think of your company whenever they—or their friends—need anything. In addition to the suggestions published last month, here are seven more ideas that can be sources to favorable sales leads.

Availability Is Important

1) *Be available.* Sometimes simple availability can help you "outdeserve the competition."

Thus, a salesman of insulation products never goes on vacation without supplying customers with his transient address and phone number. "They don't use it often," he says, "but the mere knowledge that they can reach me in minutes if necessary gives them a confidence in me that no competitor can shake. The chore of announcing my whereabouts to my 50-odd accounts is more than made up by the sigh of relief heaved by that one customer who has to get in touch with me in a hurry."

Another man, the representative for a chemicals company, had a telephone installed in his car after several customers grumbled about not being able to locate him. Now they can call him at his office, home or any point in between.

Some salesmen leave self-addressed post cards with their customers as handy instruments of communication. Others make it their business to telephone customers at regular intervals.



continued . . .

Build Sales By

Whatever method you choose for advertising your own availability, you can be sure of this: one of the best ways to beat the competition is to be there when they aren't.

How does this apply to the heating and air conditioning dealer-contractor? Simple: Established customers are the best sources of productive leads. Let a friend ask them about a heating or air conditioning dealer-contractor and if you're available, you're on the inside track in a matter of minutes.

Make Use of Your Contacts

2) *Put your contacts to work for him.* As a salesman, you probably get around more than most of your customers, hence know more people. You can do a lot of double-barreled favors by bringing together those who can help each other. Your reward: a reputation for being a lot more than just another salesman.

Customers aren't just buyers. They're sons, fathers, husbands, brothers, church goers, citizens, taxpayers, campers, golf players, stamp collectors and many other things. Almost surely, there is a way to be of personal service to every one of your customers.

Possibilities range from helping a man locate that special gift for his wife's birthday to tracking down a rare air mail stamp from Luxembourg, or recommending a banker or attorney with experience in handling his problem.

What Bothers Your Customer?

Everybody has problems and businessmen have more than most. Consider the areas in which problems can occur: labor, management, production, credit, distribution, traffic, advertising, selling, lots more. But how many salesmen of your acquaintance ever take the trouble to find out what's bothering a prospect or a customer?

You can be different — when and where it counts — by earning a reputation for helping with problems. You become the first to be thought of when heating,

air conditioning or sheet metal work is needed by your acquaintances, or when their friends indicate they're thinking of making a purchase in this field.

Sell Ideas as Much as Products

In the buying offices of The Kroger Co., supermarket chain, is this sign: "If you want to sell your product to our company, be sure your product is accompanied by a plan which will so help our business that we will be more anxious to buy than you are to sell."

That's sound advice for any salesman. And here are two important ways to implement it.

3) *Point out opportunities.* From your own experience and those of your fellow salesmen, you have acquired a fund of practical knowledge — ways to save money or boost efficiency — from which you can draw for the benefit of your prospects and customers. Pass them along. "Sharing the wealth" pays the highest kind of interest — interest in you, your company and product.

Put Yourself On a Pedestal

Not by words, but through deeds. Your character and reputation can frequently be your "ace in the hole," a trump card you can play over and over again to your prospect's — and your own — advantage.

4) *Be truthful.* It's still a rare enough quality to set you apart from the man who "promises big and delivers small." If you disapprove of some course of action the prospect is taking, tell him why and tactfully suggest changes. The payoff: you'll be believed when you tell him why he ought to buy from you.

5) *Be dependable.* Once you make a promise, keep it. Almost anyone can take a letdown. A lot of people can even take two. But precious few will put their confidence in the habitual hypocrite.

6) *Be friendly.* Jay Wright sells furniture and office equipment. He keeps his eye on his local paper. When he sees any announcement of a couple getting married, a firm moving to new quarters, or a new

Remembering Your Old Customers

KEEP AN INFORMATION file handy to provide old customers, neighbors, and prospects with answers to questions they may have about locating carpenters, painters, etc., and through this service you can improve their relationship with your company



firm moving into town, he sends them a letter. It carries the conventional compliments and good wishes, but, in addition, it contains a card, headed: "Have you forgotten anything?"

This card is a check-list of furniture required for a new home, or of equipment required for a new office. And it says that Jay will gladly confer with the person addressed to help him find his needs.

Cultivate Affability

This display of friendly interest gets him many invitations, and results in many sales. And because, naturally enough, people do forget things in the helter-skelter of moving, Jay's check-list is a valued memory jogger.

It's a small step for a heating and air conditioning dealer-contractor or sheet metal contractor to adapt Jay Wright's idea to his own operation.

Friendliness toward prospects or old customers can

take any of a thousand forms: a non-business call; an item of interest from an out-of-town newspaper; a birthday greeting; regards from an old acquaintance. Look for ways to be a friend and you'll find them.

Follow Through on Sales

The average salesman loses interest in a customer after the sale is made. But why be average? There are few better ways of consolidating your gains with a customer than to "follow through" at the most crucial point of a business relationship: after the order has arrived.

7) *How's your product working?* Does the customer understand the equipment and is it giving satisfaction? Has he any questions? Inquiries like these not only show that you care, they give you a chance to resell him on his purchase and make him want to tell his friends about the company he does business with.



How Shading Cut

By S. W. Reid
Air Conditioning Engineer
Gilbert Associates, Inc.

Reducing the amount of heat which enters a house through unfavorably oriented and unshaded glass lowers operating costs and provides even temperatures between rooms

IN THE ELEMENTAL process of fusing hydrogen and helium, our sun, like an eternally operating H bomb, releases energy at a rate estimated as 472,000 billion-billion hp into space. This figure in itself is so large that to convert it to Btuh, by multiplying by 2545, has no additional significance. Only one two-billionth of this energy reaches the earth, but so far this has been enough to support life, despite the fact that a good deal of the energy is wasted.

It has been determined that the gross solar energy directed toward the earth, outside the earth's atmosphere, is about 420 Btuh per sq ft. In passing through the atmosphere, much of this radiation is scattered and absorbed. The net result is that we must consider the total radiation received by the earth's surface as being comprised of two components: that which is beamed direct from the sun and falls only on surfaces upon which sunlight appears, and that which comes from the atmosphere itself as a consequence of the scattering.

Every exposed surface receives some radiation whether it be di-

rect from the sun, diffused from the sky, or by radiation which has been reflected from the ground or other objects. The amount of direct radiation reaching the earth's surface and falling upon a beach umbrella in a clear atmosphere, amounts to more than one horsepower for each square yard of surface.

Radiation as AC Load Factor

Solar radiation on glass is a major factor in the air conditioning load. Falling upon unfavorably oriented and unshaded glass, it can add to the load at a rule-of-thumb rate of about 100 sq ft of glass per ton. The potential maximum value of this component of the cooling load is not so significant, however, as is the fact that very effective steps can be taken to reduce it. It is this possibility toward which the American Artisan directs the attention of the householder through its listing of glass shading on its card showing Standards for Rating Residential Cooling Systems.

In accordance with this rating,

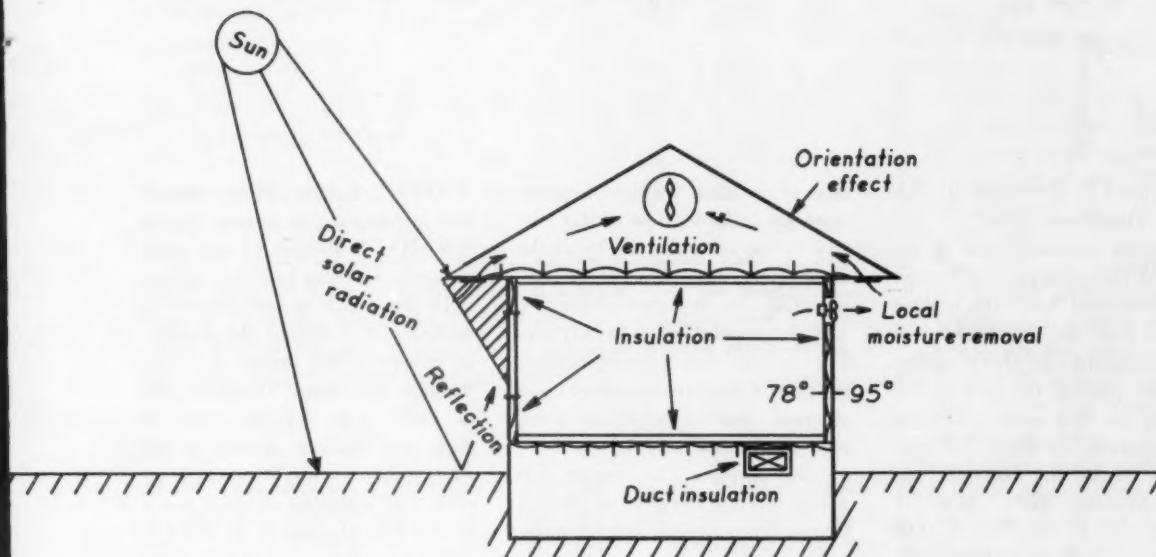
residential air conditioning systems which reduce solar load on glass by the use of outside venetian blinds, ventilated canvas or metal awnings, or outside solar screens are rated as "good" since, short of eliminating the glass areas altogether, these measures represent the best possible reduction of solar heat.

An air conditioning system would be rated as "fair" if the glass areas had inside venetian blinds of light color, with maximum slat openings set for 45 deg. Where the only glass shading is an inside roller shade or lace curtains, the system is rated "poor". It is assumed, of course, that no air conditioning system would be operated with fully exposed glass, especially glass receiving direct sunlight during part of the day.

In residential architecture, it is an axiom that the glass wall should face south. The reasoning behind this is that south oriented glass admits enough heat from the low-altitude winter sun to more than make up for its heat loss when the sun is not shining upon it. Such glass can readily be shaded from

Devices

Solar Heat Gain



SOLAR RADIATION on glass is a major factor in the air conditioning load. Falling on unshaded glass, it can add to the load at a rule-of-thumb rate of about 100 sq ft of glass per ton

the high-altitude summer sun by overhangs or other external sun-shielding devices.

There are other simple rules. Walls facing east may have glass in liberal areas as far as the cooling load is concerned, since the maximum east radiation occurs before the outside temperature rises to impose its burden upon the cooling system. Walls facing north should have minimum glass from the standpoint of heating, since little beneficial sunshine can enter from this exposure to compensate for the increased heat loss which north glass permits.

Walls facing west should have minimum to no glass from the standpoint of cooling, since the low-angle solar radiation falling upon it not only is difficult to reduce, but it also is imposed upon the cooling equipment at a time of

day when most of the other heat sources are at their peak values.

Let us consider the process of heat gain by solar radiation upon glass. Suppose we had an opening in a wall without any glass. Obviously, this would permit every bit of radiation from the outside to enter. It would also allow radiation to escape. In addition, of course, it would allow the free flow of air in and out.

Glass Traps Heat

When the opening is sealed with glass, the flow of air is stopped and a change takes place in the flow of radiant energy. Actually, the glass functions as a selective filter. To understand this, we must first recall that solar radiation is pictured as traveling in the form of waves. Only a certain band of

these are visible waves, starting with the shorter ones which we see as the color violet and ranging up through the longer ones which we see as red. We cannot see ultraviolet waves, nor can we see infrared waves. These are respectively shorter and longer than those in the visible spectrum.

Ordinary glass is transparent to waves of energy in the visible spectrum, but it will pass only a small amount of the ultraviolet and infrared energy. When the visible rays entering through the glass strike objects in the room, they are absorbed, changed to heat, and cause a rise in the temperature of the objects. The warm objects then radiate energy back toward the glass in the form of the longer waves in the infrared region. Since the glass is opaque to such waves, this energy is, in ef-

continued . . .



Why Glass is Shaded

fect, trapped in the building. This is the "greenhouse effect".

A simple demonstration of the ability of glass to trap solar energy can be observed by laying a sheet of glass over the open side of a box containing a thermometer, and then putting the box in the sunshine so that solar radiation passes through the glass. The temperature inside the box will rise quickly to some value — probably between 125 F and 175 F. The temperature will stop rising only when the walls of the box become warm enough so that energy in the form of heat is convected away as fast as it is entering in the form of radiant energy. The system will then be in equilibrium.

The amount of energy that is directed toward the outside sur-

face of a glass window depends upon the latitude, time of day, the day of the year, the clarity of the atmosphere, the influence of surroundings as radiation reflectors, and the orientation of the surface. The amount that actually reaches the glass is further dependent upon external shading such as trees, roof overhangs, reveals, awnings, or solar screens. The amount that passes through the glass is affected by the type of glass and by internal shading.

Through extensive research, gross or maximum values of solar heat gain have been established. Along with these there has also been a determination of the effect of various types of shading upon the maximum values. Considerable of these data are reported in the

ASHRAE Guide. More simplified versions of it appear in the NWAHACA Manual 11 and other manuals covering load calculation.

In this article we are discussing methods of reducing the amount of energy which enters a house through the glass. Therefore, let us review the various types of glass and shading devices to see what results we might expect from each. For example we shall use a square foot of glass at 40 deg latitude, facing west at 4 pm when there is a 15 deg inside-outside design temperature difference.

According to the Guide, this glass will admit 205 Btuh by direct sunlight and diffuse (sky) solar radiation. It will admit 20 Btuh by convection and radiation from that part of the solar heat

TABLE 1 — HEAT FLOW for West glass, 40° N. Lat., 4:00 pm, 95 F outside 80 F inside

Types of Glass	Transmitted Solar Radiation Direct & Diffused		Heat Flow by Convection & Radiation from inner glass surface		Total Heat	
	Btuh	%	Btuh	%	Btuh	%
Single Common Window	205	100	20	100	225	100
Single Regular Plate	178	87	29	145	207	92
Single Heat Absorbing Plate	94	46	56	280	150	67
Double Common Window	174	85	16	78	190	85
Double Regular Plate	135	66	32	159	167	74
Heat Absorbing Plate Outdoors Regular Plate Indoors	76	37	39	195	115	51

(Total heat flow through glass) = (Transmitted solar radiation) + (Heat flow by convective and radiative exchanges at the indoor surface)

All data from ASHRAE Guide.

TABLE II — AUSTIN TESTS show that discomfort from sun on glass is more a measure of mean radiant temperature than air temperature

	Mean Radiant Temperature (F)		Difference* in degrees
	With Device	Without Device	
Reflective screen	84	87	3
Venetian blinds (white or aluminum)	80	80	0
Fly screen	85	86	1
Awning (average of types used)	82	86	4
Double vs. single glazing	80	80	0
Clear vs. heat absorbent glass	80	80	0

*Differences of 3 or 4 deg produced significant effect on comfort occupants (From Residential Air Conditioning, a summary report of the Austin Air Conditioned Village project published by the National Association of Home Builders Research Institute)

which it has absorbed. Other types of glass will compare with common window glass as shown in Table 1.

Shading Reduces Heat Flow

Shading is effective in reducing the heat flow through any kind of glass, however, some methods of shading are considerably more effective than others. Outside shading is the most effective, since it stops the radiation before it reaches the glass. This can be accomplished by fences, trees, canvas awnings, metal awnings, or slatted solar screens. If canvas awnings are used, they should be vented at the top so that hot air will not accumulate beneath them. In general, good outside shading can be counted upon for a reduction of about 70 percent in solar radiation.

Inside shading is worthwhile also, though not nearly so beneficial as outside shading. The color of the inside shade is a factor in its effectiveness. A light colored roller shade full drawn, for instance, will reduce solar heat gain about 55 percent whereas, if it were dark, the reduction would be

only 20 percent. White colored venetian blinds with slats set at 45 deg will reduce solar radiation by 38 percent whereas the same type blind in a dark color will reduce it only by 14 percent.

In considering the problems of solar radiation in connection with residential cooling, the reflective street, driveway, walk, patio, or the swimming pool should not be overlooked. These surfaces make excellent mirrors for solar heat, and can be easily overlooked in planning the glass shading, unless one is aware that not all radiation comes directly from the sun.

Tests Study Solar Radiation

Solar radiation was one of the problems studied in the Austin Air Conditioned Village project sponsored by the National Association of Home Builders. These tests showed that discomfort from sun on glass is more a measure of mean radiant temperature than air temperature. The mean radiant temperature is defined as the temperature of a uniform black enclosure in which a solid body or occupant would exchange the same amount of radiant heat as in the

existing nonuniform environment. It is measured with a special device called a radiometer. Table II contains results of the Austin tests.

List Economy Factors

The NAHB report concludes that for the most economical air conditioning:

- 1) Minimum glass areas consistent with aesthetic and sales requirements should be used.
- 2) Required glass areas should be concentrated in north and south walls.
- 3) The savings in operating cost for cooling only due to using double glazing would probably not justify the initial cost.
- 4) All glass areas should be shaded from direct sun rays during the cooling season.

In an earlier study made in the Research Residence at the University of Illinois (Bulletin No. 305), a test run under certain maximum conditions showed a total cooling load of 37,360 Btuh. Of this amount the windows exposed to sun were evaluated as allowing a gain of 3120 Btuh. This represented 8.4 percent of the total load.

Awnings Provide Shade

The report states that the windows were shaded by awnings during the test, and that if they had not been, the glass solar gain would have been 12,100 Btuh. In this case, the total load would have been 46,340 Btuh and the solar glass load would have represented 26.2 percent of the total. Lesser degrees of shading would have put the net value and percentage of load somewhere in between these two values.

Although the above percentages apply only to a specific house, they are, nevertheless, useful in showing why the simple shading of glass is such an important factor in achieving the Artisan's rating of "good" for a residential air conditioning system.

New Construction Materials

Preamsembled units and unconventional construction materials are being used more widely today, and are changing structure heating and air conditioning characteristics

WHETHER ONE REALIZES it or not, there have been many changes and important trends in housing in the last two decades. These trends point definitely to prefabrication and improved materials. There is another trend of which one may not be aware: One out of every 10 houses built in the last few years is a mobile home.

What are the reasons for these trends? Labor savings, material savings, and space savings. All of these influences are occurring at an accelerating pace. The day of the custom built house is waning faster than might be expected.

The National Association of Home Builders Research Division has been experimenting with reducing costs by using new construction methods of preassembled units, and unconventional, although lasting, new materials. Each year this association has built a new home in scattered areas incorporating its latest research findings. Some recently constructed homes have been built at Kensington, Md.; South Bend, Ind.; Knoxville, Tenn.; and Lansing, Mich. These houses are widely publicized through extensive invitations to builders to visit them. The thousands of builders, members of this organization, receive colorful, well-illustrated, 40 to 50 page brochures outlining, in detail, the construction methods and new materials used. Many of the

more progressive builders become enthused about these ideas and within months incorporate them as features in the houses they construct.

The Building Research Advisory Board is a government agency set up in Washington, D. C., that concerns itself with research and gathering of information on all building construction and maintenance. It issues its findings in report form and has them available at a nominal fee.

New Materials for Foams

The Building Research Institute has recently held a conference on structural foams, fasteners, and anchorage devices. On the subject of structural foams, there has been wide interest shown. Concrete foams for house slabs that are moisture resistant, light in weight, of high insulating qualities, and low in cost are being put to use. Plastic foams for walls are being developed and used in experimental residences. They are permanent in color, weather resistant, light in weight, strong, vermin resistant, and are excellent insulators.

Millions of dollars are being spent by private industry on research for materials and methods of construction. It can be expected that this research will result in a better house at lower cost, and that it will be quite a different house

THIS ARTICLE is the second of four reports made by the New Developments Committee of the National Warm Air Heating and Air Conditioning Association to acquaint the members of NW-AHACA's Research Advisory Council with problems that now face or will face the industry in the not too distant future.

In this article the committee reports on the rise in popularity of new construction materials, and how the heating and air conditioning industry is affected by these changes. Members of the New Developments Committee are: M. E. Ralston, The Williamson Co., chairman; Al Galaba, Morrison Products, Inc.; and W. L. Riehl, International Heater Co.

Gain Favor With Builders



NEW DESIGNS IN BUILDING construction make wider use of prefabricated panels of metal, glass, and plastics. These changes, occurring at an ever accelerating pace, are the source of additional problems for the heating and air conditioning industry

from the ones most builders are erecting today.

Pre-fab Trend Growing

The changes or trends are highlighted by the fact that more and more homes are prefabricated entirely or made up of prefabricated sub-assemblies. New homes are being erected in a matter of hours rather than weeks or months. In some areas, particularly in the South, the *shell* house has come into prominence. Hundreds of these *shell* houses are erected on a tract. They are framed, roofed, rough plumbed, and sold to do-it-yourselfers for \$3000 to \$5000. The do-it-yourselfer then completes the building with the usual result that equipment is poorly or inadequately installed.

Here are some of the details appearing in the changing home building pattern:

Types — An increasing number of homes are of the one-floor plan using slab or crawl space construction.

Exteriors — Metal; enameled, porcelainized or plastic materials, various colors and textures; laminated and impregnated wood. Huge glass areas are prominent in walls.

Construction — All weather concrete mixes, use of insulating foam concrete for slabs and walls. Prefinished and preassembled walls, wall openings, doors and windows. Preassembled multipurpose structural components such as roof trusses, floor beams and floors.

Plumbing — Preassembled light weight, rigid or flexible plastic plumbing pipes.

Electrical — Use of preassembled wiring trees.

Insulation — More and better insulation is being used with the

result that heat loss and heat gain is less.

Heating and Cooling — Units with comparable capacities (Btuh ratings) are becoming smaller, and with increased insulation of buildings, smaller units can serve a larger space. There is a trend toward more counterflow and attic installations.

New Systems Must Adjust

The New Developments Committee recommends that the Research Advisory Council decide that the Field Investigating Committee be assigned to make tests in some of the newly developed houses. The committee believes that these developments in residential building may make obsolete present types of air distribution systems, and that research be continued to keep air distribution systems compatible with changes.

How to Figure Furnace Capacity

... when outdoor air temperature is
between zero and 45 F.

By Edward J. Brown
Research Assistant Professor
University of Illinois

Burner cycle
provides clue to reserve capacity

A LETTER RECEIVED at Mechanical Engineering Laboratory, University of Illinois from a manufacturer's representative stated:

"Many times dealer-contractors cannot collect on heating installations made during the summer and fall until the customer has tested the equipment during zero weather. Do you know of a method whereby a dealer can test an installation in the fall and predict the operation of the plant in zero weather?"

A method for checking the capacity of gas-fired and oil-fired forced warm air furnaces with outdoor temperatures above design temperatures, has been outlined in "Correct Standards for Forced Warm Air Heating Systems." (American Artisan, July 1955, pages 64-67.)

Burner Cycles are Timed

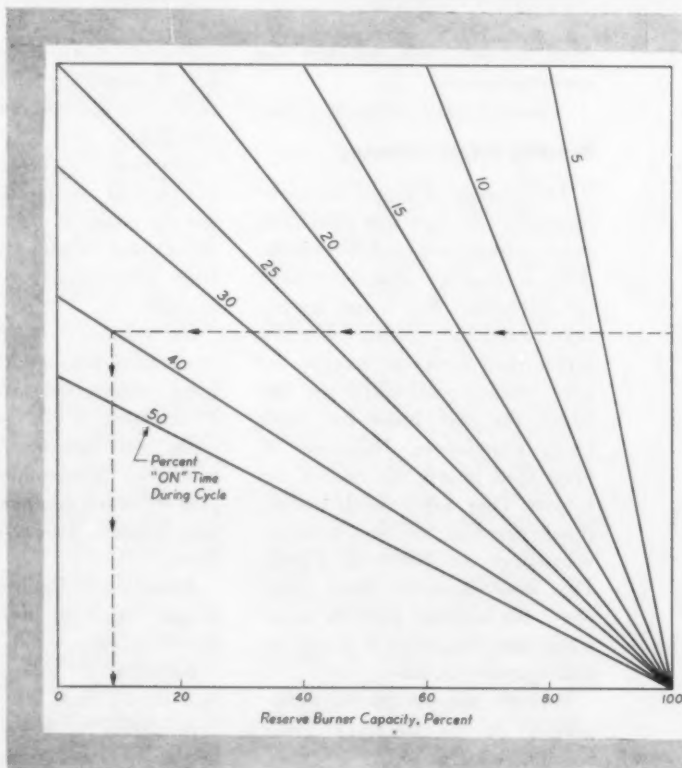
The method requires the use of a watch to time burner cycles, plus the preparation of a simple graph. Some elaboration on the method, as will be shown here, eliminates the need for drawing a graph for each job. By referring the length of burner cycles to the charts presented here, the dealer-contractor can determine both the reserve furnace capacity at design temperature and the outdoor temperature at which the burner will operate continuously.

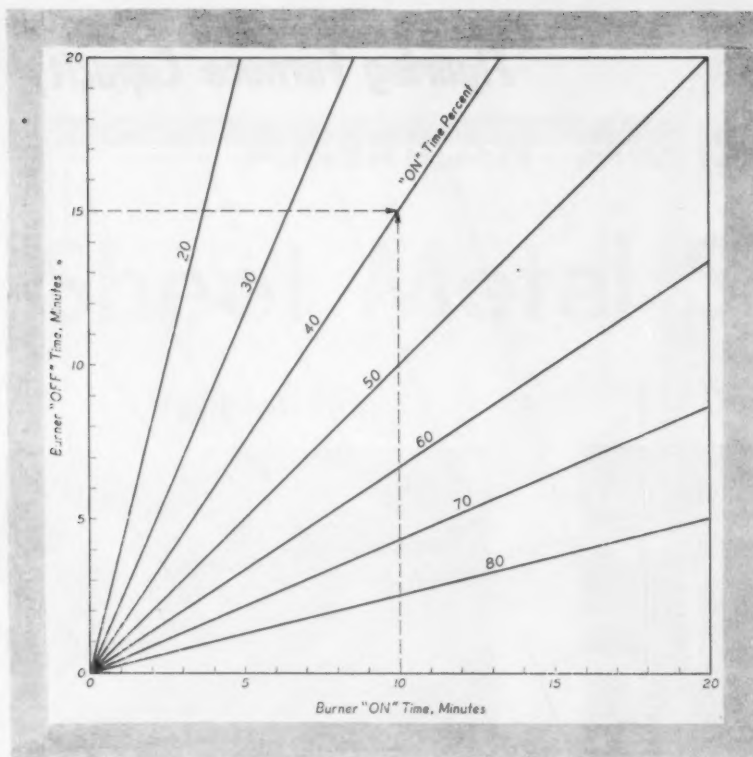
Measurements of burner operating time should be made when the blower is operating continuously and when the thermostat is not affected by solar heat gains or internal loads. Therefore, the burner cycles should be observed either at night or during a day when the sky is completely overcast. Observations should not be made at times when cooking or

other internal loads interfere with normal burner operation. Outdoor temperature may be as great as 45 F, although a temperature nearer 30 F is preferable. Observations should be made while the outdoor temperature is constant, rather than during periods of rising or falling temperature.

The method consists of timing

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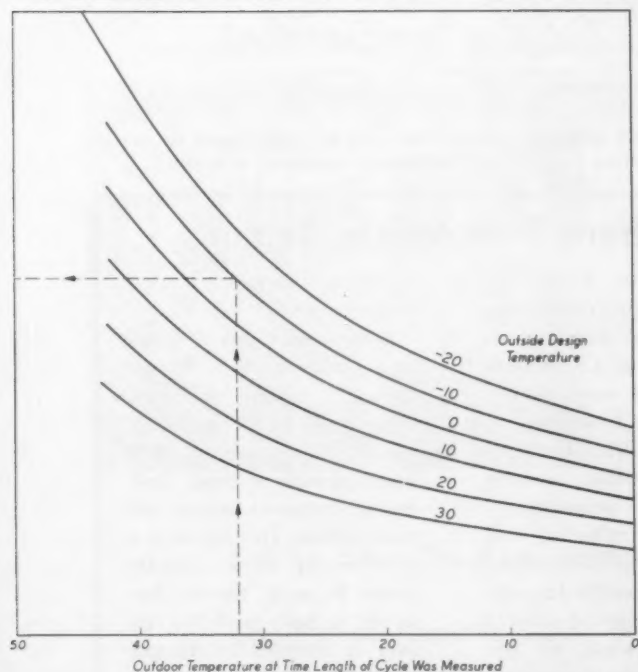




1 "ON" AND "OFF" TIME is used to find percent of time burner operates

several consecutive cycles of burner operation. (The length of the burner cycle includes the time the burner is "on" plus the time the burner is "off.") The outdoor temperature should also be noted.

The burner "on" and "off" times can be referred to Fig. 1 to express the "on" time as a percentage of the length of the burner cycle. This percentage and the outdoor temperature at the time the cycle length was measured, can be used with Fig. 2 to determine the reserve capacity of the furnace under design conditions. The outdoor temperature at time of measurement and the percent "on" time used with Fig. 3, indicate the outdoor temperature at



2 RESERVE FURNACE CAPACITY can be established on any day the outside temperature is between 0 and 45 F and when the percent of burner "On" time is known

continued . . .

which the burner will operate continuously.

Solve Sample Problem

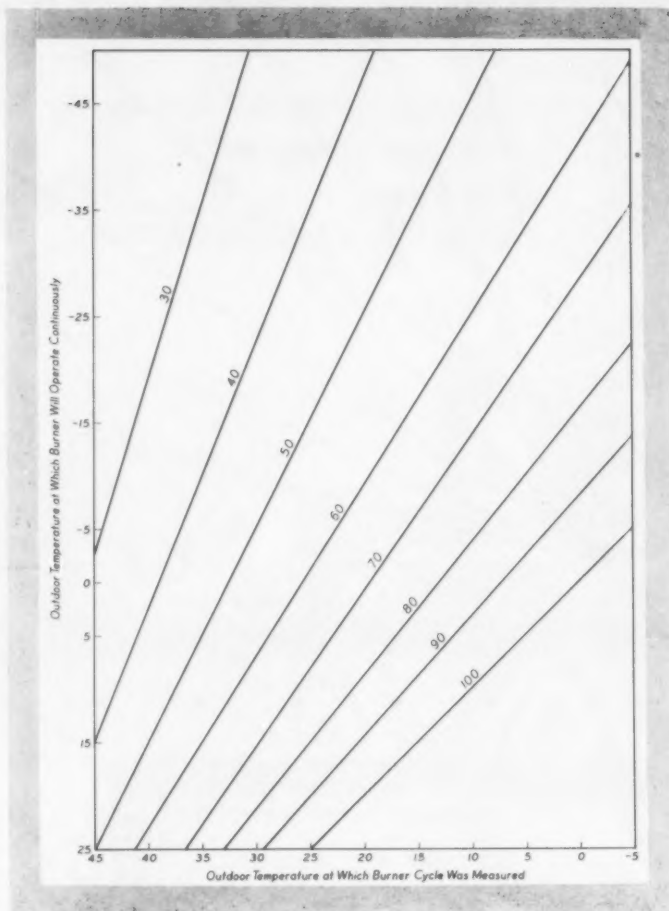
For example, assume that a burner has been timed through several cycles with an outdoor temperature of 32 F. The average cycle length is 25 minutes, the burner is "on" 10 minutes and "off" 15 minutes during each cycle. These times are referred to in Fig. 1, and the intersection of the dotted lines indicates that the burner operates 40 percent of the time during 32 F outdoor temperature.

How will furnace perform at design temperature of -10 F? Refer to Fig. 2. Enter the chart at 32 F (the outdoor temperature at which measurements were made), proceed upward to intersect the -10 F design temperature curve. From the intersection go left to intersect the 40 percent operation curve. From that intersection go down to the horizontal scale and read 8 percent. This indicates that the furnace will have an 8 percent reserve capacity at -10 F outdoor temperature.

Further Calculations Made

At what outdoor temperature will continuous operation occur? Refer to Fig. 3 and enter the chart at 32 F on the horizontal scale. Proceed upward to intersect the 40 percent curve. From the intersection go left to the vertical scale and read -17 F. This is the temperature at which the burner will operate continuously. In this case the furnace had adequate capacity, and in fact, had a satisfactory reserve capacity of 8 percent.

Figuring Furnace Capacity



3 CONTINUOUS BURNER OPERATION can be determined at any outside temperature when percent of burner operation is known

Where This Article Began

THE NATIONAL Warm Air Heating and Air Conditioning Association has sponsored research on warm air furnaces and residential warm air systems at the University of Illinois since 1918. The University staff which conducts the research is primarily responsible for collecting and analyzing research data and reporting the results. In addition, they frequently answer questions on warm air systems from dealer-contractors,

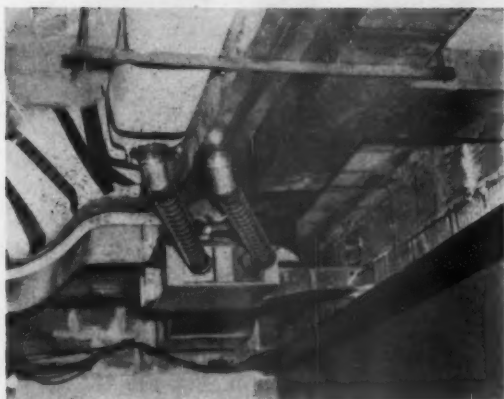
engineers, architects, and homeowners.

Letters have asked about such subjects as: furnace capacity, relative humidity, continuous air circulation, small pipe systems, crawl space plenum systems, heating of basement rooms and many others. This article is a case history of an inquiry about figuring reserve furnace capacity and the answer as provided by the university's staff.

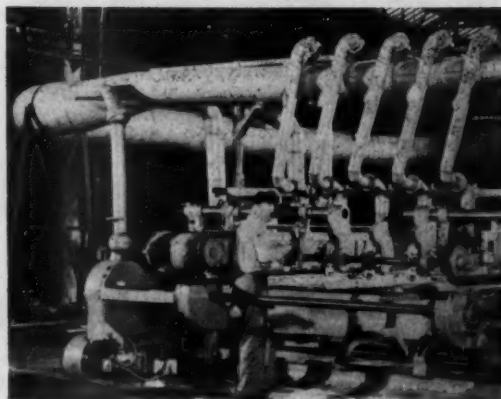
AMERICAN ARTISAN

Sheet Metal Section

Ventilation



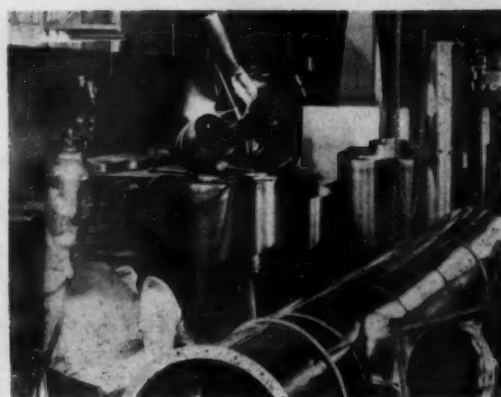
Dust Removal



Architectural



Specialties



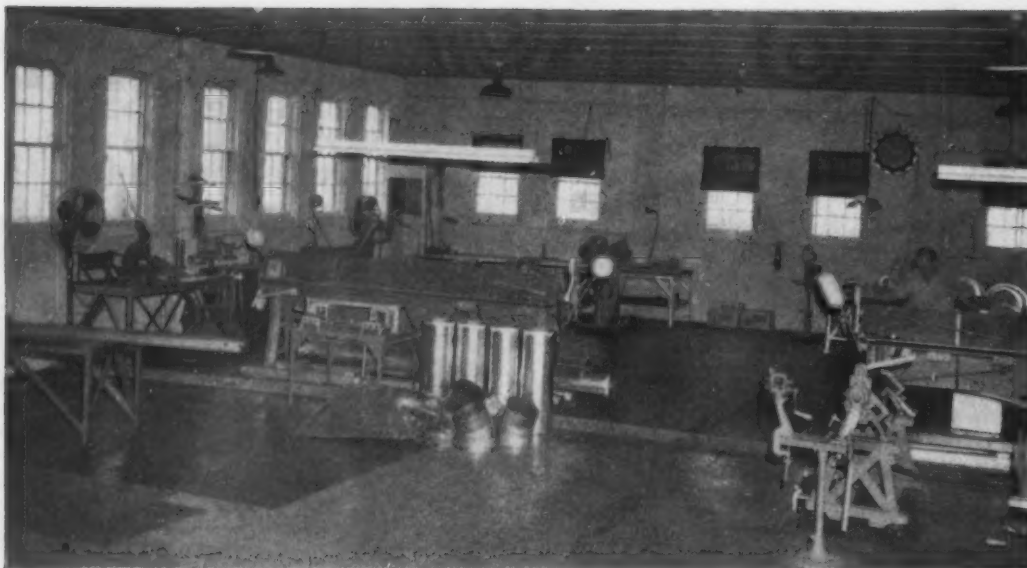
Set up Your Shop for Light and Heavy Gage Work . . . Page 68

Condensed Reports Guide Job Progress Page 72

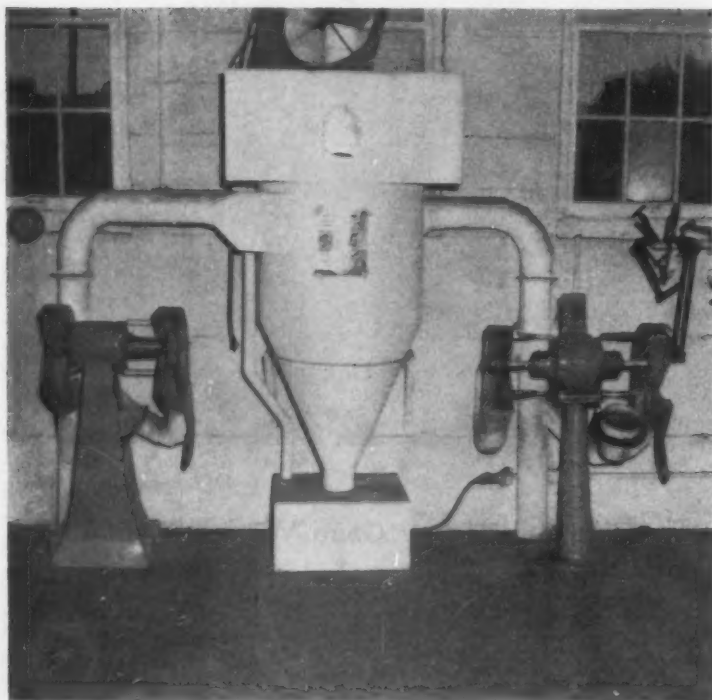
A Check-list You Can Use with SMACNA Duct Manual. .Page 77

Arrange Your Shop

Light Gage or



LIGHT GAGE fabrication is done in one end of the shop with tools specifically arranged to avoid congestion of both fabrication and scheduling procedure



MINIATURE DUST COLLECTOR and blow pipe system acts both as a demonstration model and as a practical application for the company's shop. Customers buying their first blow pipe system have the principles explained to them on this small model

Tools To Handle

..... Heavy Gage

... sheet metal work in separate areas. Make commonly used tools portable to get maximum benefit

"MANY THINGS HAVE CHANGED in the sheet metal industry during the 33 years we've been in business, and each change has taught us a lesson. We've tried to put what we've learned to work for us, with the result that our business encounters few major emergencies. We are still learning and applying those new techniques to our specialty — blow pipe work," says Richard A. Hepper, Puhl & Hepper Mfg. Co., Inc., St. Louis.

Experience has been a good teacher and the officers of this company have been good students. Many of the current practices are an outgrowth of temporary arrangements put into effect to expedite some unforeseen situation that arose during the handling of a customer's order.

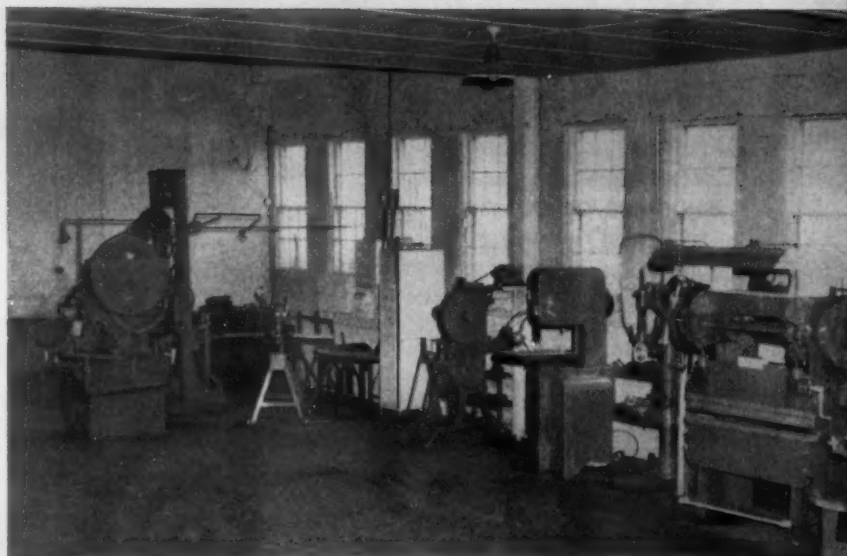
Splits Use of Shop Tools

One idea, learned from experience, is the method of dividing shop equipment and working areas to handle light gage metal work in one section of the shop, and heavy gage metal work in another section. This avoids overlapping of major tools and machinery.

The shop is so arranged that sheet metal is stored in a room located midway the long side of the rectangular shop. Sheet metal is stored in racks fabricated from

channel iron, or combinations of channel iron and large pipes, and is clearly marked as to gage and quantity remaining on each shelf.

When an order is received, a cart, similar to those employed at railway stations for loading mail and packages in baggage cars, is used to move the sheet metal from the storage room to the layout bench. The company has eight of these carts. A cart, when not in use for moving sheet metal from the storage room to work benches, is used to move partially fabricated sheets to other locations for the operations required. These carts, which are 36 in. high and built on a channel iron frame 46 x 122 in., are easy to move and are at the right height to make it convenient for mechanics to move work to and from machines.



HEAVY GAGE sheet metal work is performed in one area of the shop containing heavy duty powered equipment for this purpose. It avoids conflict with light gage work being scheduled through the shop

Many shop improvements are due to the recommendations made by employees to Richard Hepper, who evaluates the suggestions and, if acceptable, puts them into effect.

One suggestion made by an employee was to install a wood block floor over the concrete floor in those areas where men were standing most of the day while making pattern layouts. Since the installation of the wood block floor these men no longer tire as the working day nears its end.

Stock Parts Speed Repairs

Some of the company's work comes from maintenance of blow pipe systems in shoe factories. Because of the many hoods used in this type of blow pipe work, it's possible for the company to carry a large number in stock. When

Organization Eases Shop Work continued . . .



SHOP AND OFFICE building since 1930 is kept attractive through landscaping and frequent redecorating

an order is received to replace a hood, one is taken from stock and the order is completed in record time. By being able to rely on this type of work, it is possible for the shop to keep busy between peak loads by filling in with the fabrication of these hoods.

Another type of work which the shop utilizes as "fill-in" is the fabrication of material handling blowers for its own blow pipe systems. These blowers are fabricated according to specifications written by the company and based on experience gained in the fabrication and installation of blow pipe systems. All components of the blower are fabricated in the shop; this includes the blower housing, the wheels, etc. The blower wheels are balanced to perform efficiently and without vibration.

Some ideas adapted to shop operations include the separation of light and heavy fabrication to opposite ends of the building. Seldom used tools are mounted on portable frames and can be pulled to either end of the shop when needed. In general, these frames are made portable by attaching two heavy duty casters at one end with stout, solid legs at the other. Across the end with the two solid legs is a bracket fitted to receive a dolly that can be set under a hole that has been drilled into the bracket. By inserting the dolly plug into the drilled hole, and lift-

ing the solid legs from the floor, it is possible to move heavy tools to any location in the shop.

This makes it possible to get the maximum use from tools such as lock formers or a multiple punch bench, which may be re-

quired for a specific job in either the light gage or heavy gage sections of the shop.

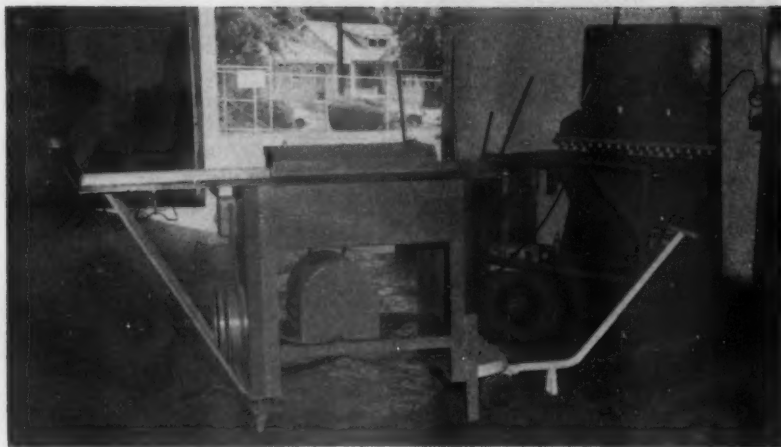
Another idea that has paid off in the operation of the shop was to move the welding operation out of the area and into a well venti-



SCHEDULES FOR WORK through shop are planned at conference with John Puhl (right) and mechanics responsible for layout and fabrication. Schedules are checked by R. A. Hepper (left)



STORAGE SHEDS with separate doors hung on overhead rails make it convenient to store completed components for blow pipe and ventilating systems until needed at the job site



TOOLS usable for both light and heavy gage fabrication are mounted on portable frames that increase their value in the overall operation of the shop

lated room adjacent to the shop. Numerous jigs developed by employees make it possible to fabricate quickly and safely the components involved in an order.

Similarly, the paint shop was moved to a separate room. This eliminates the discomfort that frequently is caused by paint odors entering the atmosphere in which men are working.

All tools in the shop are painted frequently and give the impression of being well maintained. The major tools are painted green, with light yellow trim for moving parts and at danger spots.

Another idea used by the company is the method of handling orders which require large numbers of components before they can be sent to the job site or before erection can begin. To solve this problem, a building, 64 ft long, 8 ft high and 20 ft deep, was constructed on the lot in back of the shop. This building utilizes eight doors hung on overhead rails to permit the full use of the entire area for storage of different job components being fabricated prior to their erection schedules. In this way, once an order has been received, the shop can begin work on it at its convenience. The completed parts are protected from weather in one of the eight bins in the storage building until needed.

Another advantage of this build-



RAILWAY TYPE CART is used to move sheets from stock storage area to layout bench and shop tools

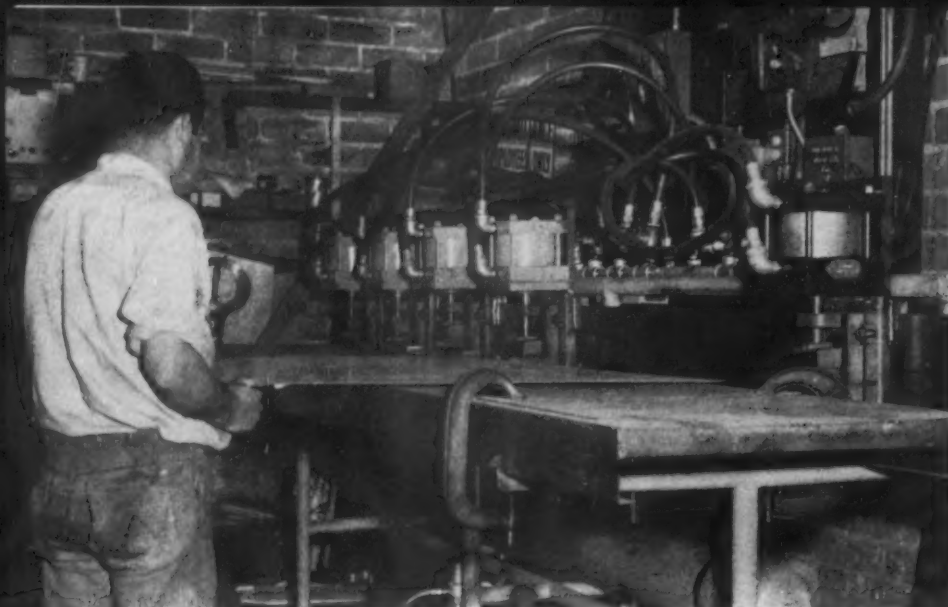
ing's construction is that it is possible to enter the building at the point where the parts are stored. Thus, moving some stored parts to get at others is not necessary, cutting down on both the expense of storing and of possible damage during storage.

The company's tradition of serving a customer to the best of their ability has paid off; a number of the people who gave business to the company, which was started in 1927, remain customers today.

In 1927, Edward P. Puhl and Richard A. Hepper formed their partnership, after having worked together for five years prior to this with another metal fabricating company. As the business prospered, it moved, in 1930, into its present building and was incorporated. The building has been very

well maintained and does not give any indication of its true age.

Mr. Puhl died in 1953, but not before his two sons, Robert and John, had joined the company. Today, Robert Puhl is vice president-secretary and a sales engineer. John Puhl is treasurer and shop superintendent. Richard A. Hepper is president; in addition to his work managing the company's affairs, he still calls on many of the old customers to coordinate their needs with the shop's capabilities. He is a director of the Sheet Metal and Air Conditioning Contractors' National Association, a past president of the St. Louis Local Chapter, and a Trustee of the Sheet Metal Workers Health, Welfare and Pension Plan. In addition to these interests, he is very active in the local Lions clubs.



SHOP TOOLS are designed by members of the staff to perform work where there is considerable duplication. This pneumatically operated notcher readies sheet metal for forming into duct sections

Condensed Reports Help Contractor Keep Pace With Jobs in Progress

Summary of total labor and materials used for any one job, plus completion status enables Marlowe C. Hodge to recognize potential danger signals and to immediately take corrective measures



SAFETY IS PRACTICED daily throughout the shop. Note safety sticker at electric outlet and guards around automatically operated sheet clamps

"QUALITY WITH SERVICE" was the motto selected for Hodge Sheet Metal Products when it was established as a sheet metal contracting firm in 1919. The company now operates under the guidance of Marlowe C. Hodge, son of the founder. Mr. Hodge is also currently serving as a director of the Sheet Metal and Air Conditioning Contractors' National Association.

The company's well earned reputation for quality and service is the facade which Hodge Sheet Metal Products presents to the public and its customers. Behind the company slogan is an organization that functions as a team.

On an average day, president Marlowe Hodge will ride herd on a number of widely scattered jobs manned by approximately 125 employees. And what kind of a staff does he have to supervise this extensive activity? You'll find Mr. Hodge, his secretary and her assistant at the headquarters office.

As might be expected, this contractor has a good memory, enabling him to stay on top of a multitude of activities without becoming bogged down with their details.

His guide in exercising complete control over work in progress is a report which is compiled each week.



COMPANY OFFICERS of Hodge Sheet Metal Products are, from left: Glenn Hodge, vice president; Lucille Hodge Peel, secretary-treasurer; Thomas C. Hodge, chairman of the board and founder of the company; Marlowe C. Hodge, president



EVIDENCE OF the company's skill with sheet metal is proudly displayed on the front of its office building. Stainless steel is used to trim the entrance, the door frame, the door itself, as well as the metal letters above the ornamental two tone aluminum ledge

It is prepared at a separate office under supervision of his sister, Lucille Hodge Peel, secretary-treasurer of the corporation. The reports include notations on current expenditures and also accumulated figures showing total labor and materials charged to the job.

Unlike some executives who receive such reports as a matter of course and may or may not act on them, Mr. Hodge regards his as an indispensable tool. Also at his fingertips he has a summary of the estimated costs for each job. In this way he may quickly tell if weak spots are developing that offer a threat to the estimated profit.

"It may be possible to maintain tight control by assiduously following work in the field," Mr. Hodge admits. "If I had to visit several hundred jobs regularly to make sure they were going right, there simply wouldn't be enough hours in the day."

His management function might be compared to that of a doctor. It's the nurse who takes temperatures and does other detail work. She marks the information down on a chart and all the doctor has to do is take a look to know what kind of progress the patient is making. By the same token, information channeled to Mr.

Hodge's desk enables him to pick out danger signals and take corrective action before it's too late.

"I never wait until a job is over to find out whether we're in the black. I know where every crew is every day, and how much money remains unspent in the labor estimate."

It would probably be fair to say that Marlowe Hodge considers himself a business man first and a contractor second. Though not ashamed to handle a pair of snips, he regards a pencil as a far more potent weapon in the battle for profits.

The president personally checks

continued . . .

Custom Work, A Specialty

every bid that the firm puts out. In this phase of the company's operation he has the benefit of complete information, much of it coming to him in condensed form. His brother Glenn serves as vice president in charge of the sales and engineering departments; he informs the president of job descriptions, quantity takeoffs, etc. for work that is being estimated.

In the sales department, Glenn Hodge has, through diligent effort, established excellent relations with some of the largest general contractors in southern California. He also provides many of the job leads for the company.

Besides the people already mentioned, other key personnel routing progress summaries to the office are: Ben Gravier, shop superintendent; Jay Johnson, field superintendent; Walt Findlay, air conditioning superintendent; and Bill Underwood of the sales department. Jay and Walt report regularly on visual progress of the various projects under their immediate supervision in the field. Ben funnels the same type of information from the shop to the front office. All work together in a coordinated effort.

Bid Procedure Outlined

All bid estimating follows a set procedure. For instance, quantities of stainless steel are written in blue pencil, whereas a red pencil is used for copper. Aluminum estimates are made in blue ink and a black pencil is used for galvanized materials. This may seem a small matter, but it's a sure way of avoiding costly estimating mistakes where weights of expensive



ARCHITECTURAL FINS for Los Angeles Memorial Sports Arena were mass produced by • • •



• • • three heavy presses and a large inventory of press brake dies which make multiple operations economical to perform

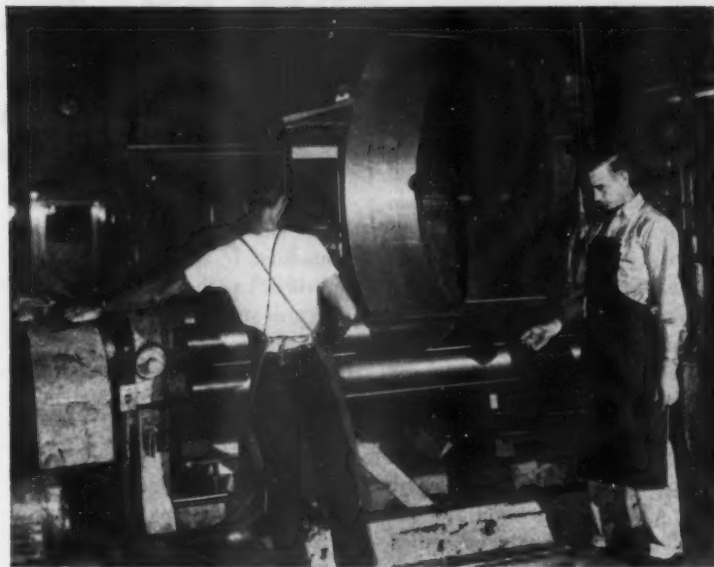
materials are estimated at a fraction of their value.

Even though he trusts his memory, Mr. Hodge doesn't expect it to do the impossible. For this reason, he has instituted another management tool which has become valuable in the estimating

procedure. It's a series of notebooks which list every job the firm has done during the past decade.

Each job is entered under the name of the customer, some having dozens of entries while others have only one or two. Whenever a similar job comes up, referring

of Skilled Journeymen



POWERED SLIP ROLL former (8 ft) handles an order for a close tolerance rocket barrel of chromally steel for use in an experimental space project



MANUAL HANDLING of large quantities or heavy pieces is taken care of by these two power operated lift trucks

to the notebooks gives the estimated and exact costs of the previous jobs.

This information is brought up to date by applying current wage costs and material prices. The result is that an almost instantaneous figure can be used for discussion,

and from which the basis for an estimate can be derived. This procedure makes it possible for Mr. Hodge to check out three or four bids in an hour and to know that each is reasonably accurate.

Special effort on the part of management to keep overhead

costs at a minimum pays off by making the capital available for the purchase of new and better equipment. This, in turn, improves the quality of work put out by the shop, while making the whole operation more efficient. Thus the effort makes it possible for the business to grow at a healthy rate.

Well Equipped Shop

The shop is equipped with 10 press brakes of varying capacities up to 300 tons, four shears, and a full complement of welding, rolling, punching, and notching equipment. Two fork lift trucks are used to remove the back-breaking labor of handling materials. A fleet of 20 trucks and cars provides the company with its transportation. The company's shop area totals 89,840 sq ft, with an additional 25,000 sq ft for parking.

Because it has handled a wide variety of work through the years, Hodge Sheet Metal Products has accumulated a large inventory of press brake and punch press dies. These tools make it possible to perform almost any type of sheet metal operation without delay from the dies on hand. A small machine shop is maintained for the occasional job requiring additional tooling.

Emphasis on custom work has led to jobs in the aircraft, guided missile, and electronic fields for such firms as North American Aviation, Lockheed, Convair, and Douglas Aircraft.

Just recently, for example, a honeycomb grid to control air flow in a trisonic wind tunnel was delivered and installed at the

continued . . .

Aids Customers with Design

Problems To Build Sales Volume

North American Aviation Corp. The tunnel, 28 ft in diameter, is used for testing such futuristic mechanisms as the prototype of the X-15 space ship and other related programs. Another job, done for Aerojet General, entailed fabrication of rocket barrels from chromally steel. The circular shaped units were in double sections 12 ft long, and when finished became the body portion of air-to-air rockets.

Other jobs in the same general category have been completed for the U.S. Air Force Motion Picture Squadron and Vandenberg Missile Launching Base. Work of this nature must be done to close tolerances and exacting specifications. The company's reputation for "quality with service" backs up its ability to meet such needs when they arise.

In addition to this type of assignment, the company handles architectural sheet metal, including ornamental, new and old commercial construction, industrial maintenance, and heating and air conditioning.

Uses Telephone Book Ads

The vast majority of work comes to the sales department through recommendations and referrals. Like many successful sheet metal contractors, Mr. Hodge has learned that satisfied customers are about the best sales force a company can have. His advertising is limited to a few local construction and industrial trade magazines — plus

the classified directory of the telephone book. "The telephone directory gets into every prospect's office," he points out. "And no salesman can do that every time and at the right time."

Customers who desire engineering assistance are provided with their needs. However, Hodge Sheet Metal Products does not maintain a full-fledged engineering department. The main reason for this policy, Mr. Hodge explains, is that it would take a large staff to do engineering on the broad scope of activity in which the company is engaged, and when considerable engineering service is required, he feels it's better to bring a consulting engineering firm into the picture.

Erected L.A. Sports Arena

Many examples of the company's work are found on private and public buildings throughout the Los Angeles area. One of the most notable structures is the city's new Memorial Sports Arena which was rushed to completion for the Democratic National Convention last year. Hodge Sheet Metal Products used 122 vertical galvanized metal fins which form a striking feature of the building. The fins are 30 ft high, 4 in. wide, and 9 in. deep. They separate panels of mosaic tile, making the exterior virtually maintenance free.

The firm has also handled several contracts for both Disneyland and Knott's Berry Farm — two of the area's most popular tourist at-

tractions. A downtown project was the General Petroleum Office Building. In Hollywood, the firm worked on the unusual Capital Records structure, a circular building which received a great deal of publicity when erected a few years ago. Toward West Los Angeles, the enormous Mormon Temple is another testament to the firm's skill in its application of sheet metal to good architectural use.

Many less unusual contracts occupy the bulk of the company's time. One customer of long standing is the Bank of America and its many branches. For many years Hodge Sheet Metal Products has handled much of the bank's new construction and modernization work from San Luis Obispo to the Mexican border.

Thomas M. Hodge, the founder of the company and creator of its creed, is now retired. However, he remains available for advice and assistance to his two sons and daughter who now run the business. The elder Mr. Hodge fills the post of chairman of the board in the corporation.

In addition to his job as a director of SMACNA, Marlowe Hodge is a member of the national association's Finance Committee. He has also recently served as president of Sheet Metal Contractors' Association of Southern California and will head the local committee acting as host of SMA-CNA's 18th annual convention scheduled for April 24-26 in Los Angeles.

Here Is a Check-List For Use With SMACNA Duct Manual



... to avoid overlooking accepted
local alternate
specification, fabrication, and installation practices

By Henry J. Couch

Executive Secretary, Ventilating and Air
Conditioning Contractors Assn. of Chicago

THREE ARTICLES by James H. Stiggleman in the December, 1959, January and February, 1960 issues of *American Artisan* explained the nature and use of the "Manual of Duct Construction for Ventilating and Air Conditioning Systems," which had been published by the Sheet Metal and Air Conditioning Contractors National Association.

Manual Uses Best Designs

The general view of the articles was that the Duct Manual was an excellent piece of work, and that it filled a long standing need in the industry. Experience has shown this to be so. The manual established standards where none had existed, and greatly simplified the work of the consulting engineer and contractor.

It was written with a minimum of "alternate methods" included,

showing in most cases only the best and most economical duct designs. Others which were as good but unnecessarily costly, or cheaper but not consistent with good engineering practice, were deliberately omitted.

In certain instances, however, where local practices were very strongly divergent, and where cost and acceptability were comparable, alternates were included.

This inclusion of additional alternate details was required because of the variation in job conditions which would be met.

Access doors, for example, will differ if the fan housing is insulated or non-insulated. Standard, short, or long radius elbows will be needed for various jobs, depending upon the availability of space. Air intake designs will often be determined by basic architectural features.

Such alternate arrangements,

while they are limited in number, should nevertheless be noted in plans and on specifications.

Alternates Described

To assist all concerned in making sure that no alternate is overlooked, the Ventilating and Air Conditioning Contractors Association of Chicago has prepared a check-list for use with the duct manual for ventilating and air conditioning systems.

This check-list states: "The duct manual was designed to simplify the work of the consulting engineer by eliminating the need for detailed construction drawings and specifications. It was recommended that the subject could be covered quite thoroughly in the ventilating specification with the statement, 'Ductwork shall be in accordance with the Duct Manual.'"

"Experience has now demon-

continued . . .

Check Local Specification Practices Against Duct Manual Recommendations

strated the basic validity of this recommendation. There are, however, certain items in the Manual which must be referred to specifically in order to establish the consulting engineer's preference where alternate equipment or techniques can be successfully used.

"Specific decisions relative to duct construction must be made by the engineer and should be set forth in the ventilating specification, under the 15 headings included in the check-list."



Copy and Use This Check-list

1) Recommended gages — Table 1, page 9. Plates 5 through 14

a) *Material to be used* — steel, aluminum or copper

b) *Cross-breaking*. State whether or not cross-breaking is desired. (The number, size and spacing of joints and stiffeners is affected thereby.)

c) *Longitudinal standing seams*. State whether or not to be used
2) Corner closures — Plate 15, page 35

a) Specify whether or not required

3) Hangers for ducts — wall — Plates 16 and 17

a) *Specify type** — Band iron, shelf type or angle bracket

4) Hangers for ducts—over-head — Plates 18, 19 and 20

a) *Specify type** — Band iron or trapeze

5) Elbows — Plate 21

a) *Specify design* — standard radius or short radius

6) Vaned elbows — Plate 22

a) *Specify vanes* — either single or double

7) Tee connections — Plate 26

a) *Specify type*

1) 90 deg tap-in

2) 90 deg straight with vanes

3) Radius tap-in

4) Radius tap-in on taper

5) 45 deg tap-in

8) Access doors (duct) — Plates 30 and 31

a) *Specify insulated or non-insulated*

b) *Specify type* — hinged, sliding or removable

9) Inspection plates and test holes — Plate 32

a) *Inspection plates* — specify screwed or sash locked

b) *Test holes* — specify pivoted, capped or plug type

10) Air intake or exhaust hood — Plates 38, 39 & 40

a) *Specify type* — rectangular or goose-neck

b) *If rectangular* — specify "standard" or "low silhouette"

11) Belt guards — Plates 41 & 42

a) *Specify details*

1) Expanded metal or solid

2) Split or one piece

3) Sheet metal or angle iron construction

4) Support from floor or from fan and motor

12) Acoustical treatment — Plate 44

a) *State if required*

b) *Provide details* — performance, design, material, etc.

13) Hangers for units — Plate 46

a) *Specify type** — rod, angle or band

b) *Specify platform* — wood or steel

c) *Specify vibration insulators* — if required and type

14) Access doors (casings) — Plates 50 and 51

a) *Specify*

1) Insulated or non-insulated

2) All metal or wood core

3) As shown on Plate 50 or on Plate 51

15) Fume hoods — Plates 52, 53, 54, 55, and 56.

a) *Specify type*

1) Type A — open, no grease filters

2) Type B — double wall, no grease filters

3) Type C & D — open, with grease filters

4) Type E — double wall, with grease filters

*Type is partially pre-determined by duct size. Some overlapping exists, however.

If, in preparing a set of plans and specifications, these fifteen items are checked off, all other construction details of the system will be taken care of by the statement, "Duct work shall be in accordance with the Duct Manual."

Editor's note: This checklist can be reproduced and a copy used with each estimate to assure a clear understanding of the specifications and their compliance.

Copies of the Duct Manual are available from the Sheet Metal and Air Conditioning Contractors Association, 107 Center St., Elgin, Ill. The price is \$5.00 to non-members.

WITH YOU IN MIND AT...

**DURO
DYNE**
FARMINGDALE, N. Y.

fresh ideas
become
new products . . .
designed to improve
job quality
and speed your production.

	"GRIP-LOC" FLEXIBLE DUCT CONNECTORS		"VANE RAIL" FOR TURNING VANE ASSEMBLIES
	"BLADE KITS" MULTI-BLADE DAMPER HARDWARE		"UNXLD" DAMPER QUADRANTS
	"WEDGE-LOC" REGULATOR SETS		S-2 HI-PRESSURE DUCT SEALER
	"DUCT SCREWS"		"DRILL-SCREWS" SELF DRILLING
	"JIFFY" PREFAB DAMPERS		INSULATION ADHESIVES
	"SHUR-GRIP" FILE AND SOLDER HANDLES		PORTABLE SPOT WELDERS
	"XX" METAL PUNCH		"OX" METAL PUNCH
NEW  CHEEKMASTER Layout and cut cheeks for elbows		NEW  PINSPOTTER weld insulation pins to ductwork PS-200 220 V PS-100 110 V PS-150 110 V	

LEADING WHOLESALERS STOCK DURO-DYNE

IN CANADA: Duro-Dyne of Canada Ltd.
56 RUGBY PLACE, MONTREAL, W. P.Q.

EXPORT: Duro-Dyne Div. States Trading Co.
401 BROADWAY, NEW YORK, N. Y.

Cable: TRADESCO

A nurse nudged us to action



"We ought to tell *all* our people about U.S. Savings Bonds as regularly as we tell them about safety," said our nurse in the first aid room. "Many of the men and women who come in here don't even know we have a Payroll Savings Plan."

We had to admit she was right. And when we called our State Savings Bond Director, he agreed with her. He helped us set up a company-wide information plan that tells every employee—frequently—about the advantages of buying U.S. Savings Bonds systematically.

That was just a few days ago. Today we have the largest employee participation we've had since the mid-forties. People always welcome a chance to make use of this sound and simple savings plan. Today there are more payroll savers than ever before in peacetime. Look up *your* State Director in the phone book or write: Savings Bonds Division, U.S. Treasury Dept., Washington, D. C.



AMERICAN ARTISAN



THE U. S. GOVERNMENT DOES NOT PAY FOR THIS ADVERTISEMENT. THE TREASURY DEPARTMENT THANKS, FOR THEIR PATRIOTISM, THE ADVERTISING COUNCIL AND THE DONOR ABOVE

A black and white photograph of two hands, one on the left and one on the right, holding a small, dark, rectangular furnace unit. The hands are positioned as if presenting the unit. The fingers are spread, and the palms are facing each other, with the unit resting between them. The hands are wearing dark suit sleeves with light-colored cuffs.

NEW

**The DAY & NIGHT
horizontal furnace
is more compact.**

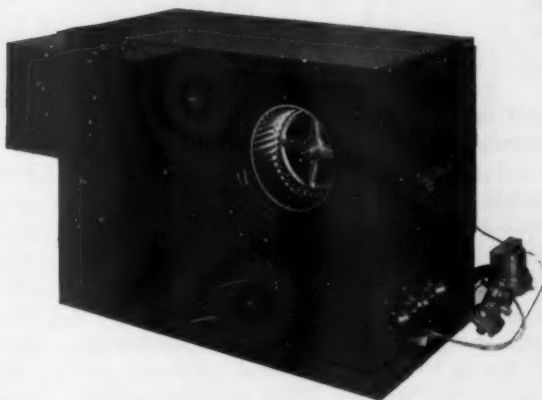
**You can vent
from either side.**

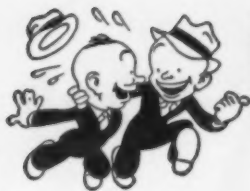
**You can bring return
air to either side.**

**Burner, blower,
and control access —
all are in one
convenient end panel.**

It's much easier, and more
profitable, to install. And you
sell and install Day & Night's
traditional trouble-free quality.
For complete specifications on
this new HA series, write today to:

DAY & NIGHT
Manufacturing Company
855 Anaheim-Puente Road
La Puente, California





Idea Exchange for Dealers-Contractors

Standardized Sheet Metal Quotation Form

... and the use of a bid depository
are designed to aid
the contractor in submitting bid proposals

A STANDARDIZED sheet metal quotation form has been instituted by the Mechanical Contractors Association of Central Ohio (MCACO). R. W. Spragg, vice president of the association and secretary-treasurer of the Columbus Heating and Ventilating Co., made the announcement.

Copies of the sheet metal form were sent to all contractors serving the Central Ohio area who either receive or submit sheet metal bids. "Thus," Mr. Spragg explained, "contractors will be able to receive telephone quotations from the sheet metal contractors with such quotation being confirmed by mail."

Importance of Form

The association has held open meetings so that all contractors, sheet metal, mechanical and any other interested parties might be made fully aware of the quotation form, and the reverse side of the form which explains the individual items that are furnished and installed by sheet metal contractors.

"Due to the fact," Mr. Spragg said, "that over 90 percent of all sheet metal bids are submitted through prime or mechanical contractors, a copy of each sheet metal contractor's quotation form will be registered with the MCACO bid depository. It is the association's feeling that the use of this quotation form and bid depository will

aid the contractor in receiving accurate bid proposals."

Rules and Regulations

Rules and regulations of the bid depository include:

1) The place of the bid depository shall be the Ohio National Bank, and all bids shall be handled by this depository until after the time of formal bid opening.

2) All subcontractor members shall file bids on all jobs of whatever size or type where the selling price is \$1200 or over. The bid depository may be used on all jobs where the selling price is \$3000 or over and are bid direct to an owner or through an architect.

3) All members shall submit weekly to the association offices a bid report form indicating all jobs the member intends to bid within the next two week period. Whenever a member obtains plans and decides to submit a bid, he will notify the office by telephone prior to the bid form. This information is to include all jobs whether they go direct or through a mechanical, prime or general contractor, and whether or not the bid depository is used on such jobs.

4) No bidder on any competitive work shall submit more than one bid on any job to any one mechanical, prime or general contractor, or shall submit a price after the closing date fixed by the awarding authority on the project,

and shall not make any alterations or changes in his bid either verbal or otherwise after the time of the bid depository date has passed.

The mechanical, prime, or general contractor shall indicate to the association offices prior to the time of receiving bids the subcontractors they desire to submit bids.

5) All bids must be postmarked or delivered in person to the bid depository at least two (2) hours before the designated bid opening time and date.

6) The name of all mechanical, prime, or general contractors to whom the bid is submitted shall be listed on the reverse side of the sealed bid envelope.

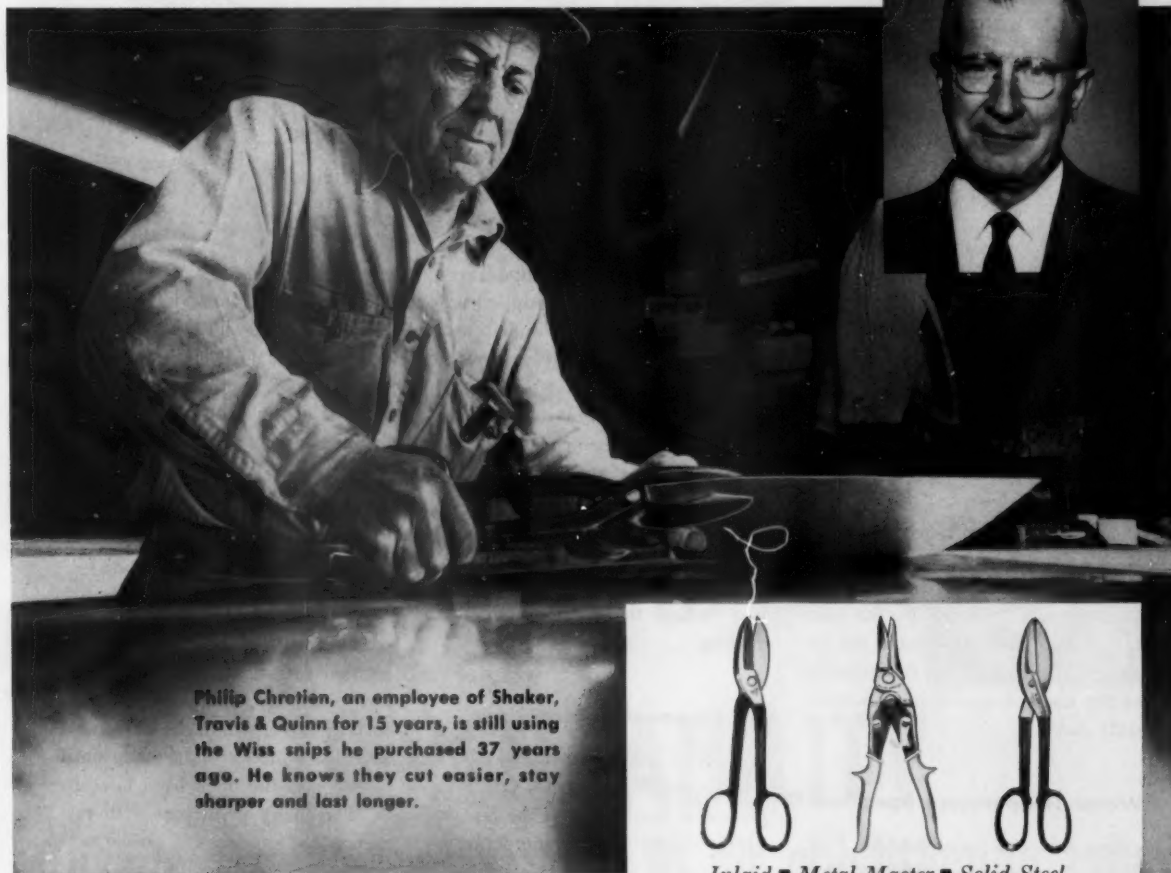
More than one sealed bid envelope may be submitted by a contractor.

7) After the low mechanical, prime or general contractor has been announced or indicated, each bidder on the project or job (as well as that low mechanical, prime or general contractor) shall have the right to information regarding the low bidder as concerns that particular project or job and that one specific mechanical, prime or general contractor.

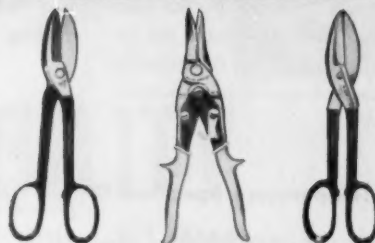
8) The low bidder, as named in accordance with Rule 7 shall be billed by and pay to MCACO a nominal charge to cover the administrative costs of the bid depository. Such nominal charge will be determined from time to time by the board of directors.

"34 YEARS OF PRECISION WORK PROVES WISS SNIPS CUT BEST"

says Francis R. Travis, President, Shaker, Travis & Quinn, Inc., Poughkeepsie, N. Y.



Philip Chretien, an employee of Shaker, Travis & Quinn for 15 years, is still using the Wiss snips he purchased 37 years ago. He knows they cut easier, stay sharper and last longer.



Inlaid ■ Metal-Master ■ Solid-Steel

"Sheetmetal workers are craftsmen who are only satisfied with the best tools. In the past 34 years I've found almost all our mechanics' tool kits contain Wiss snips.

"When you use tons of sheet metal, such as we do, on a single industrial installation or public building, you've got to have tools that give precision and can take the beating that goes with the trade. That's why we depend on Wiss snips."

Why not take the advice of Mr. Travis . . . next time you order, specify sure-cutting, easy-handling Wiss snips. They're economical over the long run.

WISS INLAID BLADE SNIPS cut with lasting sharpness, tremendous power. High carbon crucible steel blades, welded to hot drop-forged frames. Complete range of sizes, 11½" to 17". Models: straight cutting, circular cutting, curved blades, and bulldog notching.

WISS METAL-MASTER AVIATION SNIPS, with amazing compound action, cut with half the effort required by conventional snips! They are preferred by many for their compact size, and ability to make intricate cuts. Left, right and straight cutting models, only 9¾" long, cut 18 gauge metal. Bulldog combination model, 9¼" long, cuts 16 gauge stainless steel.

WISS SOLID STEEL SNIPS, made from a special grade of solid tool steel, are available in straight cutting, circular cutting and bulldog models from 7" to 16". Priced slightly lower than inlaid snips.

WISS

... Made by Metal Craftsmen for use by Metal Craftsmen

J. WISS & SONS CO., NEWARK 7, N. J.

World's Largest Manufacturer of Shears, Scissors, Pinking Shears, Skalloping Shears, Metal Cutting Snips and Garden Shears

Who is Responsible When Performance is Based on Expected Water Temperature?

**... the customer is if he accepts
the installation
says federal court**

A CONTRACT for the purchase of summer air conditioning equipment using well water as the cooling medium, a pump for bringing the water to the surface and for the drilling of a well was made by a resident of one of the midwestern states with an air conditioning dealer-contractor.

Three weeks later, when the installation was completed and the work finished, a conditional sale agreement was signed by the customer in which he contracted to pay \$217 in cash and the balance of the amount agreed upon within sixty days.

Water Temperature Specified

In these negotiations it had been represented, according to the customer in the lawsuit that followed, that well water of a temperature of 60 F or less would be supplied for the operation of the air conditioning equipment.

When payment of the second and final instalment of the price was demanded, the buyer refused. In the suit brought by the dealer-contractor for recovery of the equipment, the defense made by the customer was that he had been induced by fraud to buy the unit; the seller had represented that water of 60 F or less would be available from the well for the operation of the unit, however, the dealer-contractor had failed to

produce water of this temperature. Since the water being supplied was 68 F, the customer claimed that this failed to meet the provisions of the agreement.

Nevertheless, twenty days after the unit had been installed, the customer had signed the contract and given his note to the dealer-contractor for the amount that had been agreed upon as still to be paid. The conduct of the customer had lacked the elements of fair dealing.

Set Reasonable Time Limit

He had an opportunity, which the law would recognize, either to protest at the failure of the unit to supply water at the temperature suggested or waive that condition. He could not legally hide this defense in the closet and at some future date bring it out to defeat a recovery on his promise considering that he had accepted performance by the dealer-contractor and expressed an apparent satisfaction in making the agreement and giving a note for the unpaid balance.

In regard to such circumstances where a balance due on an account between a dealer-contractor and his customer is acknowledged, as it was here, the federal courts once said, "In general, however, evidence of retention for an unreasonable time is admissible as a circumstance tending to show im-

plied admission of the correctness of the account claimed."

To this that court added, "The general rule, doubtless, is that one who receives an account and retains it without objection will be deemed by his silence to have acquiesced in its correctness and that it will become presumptively binding upon him."

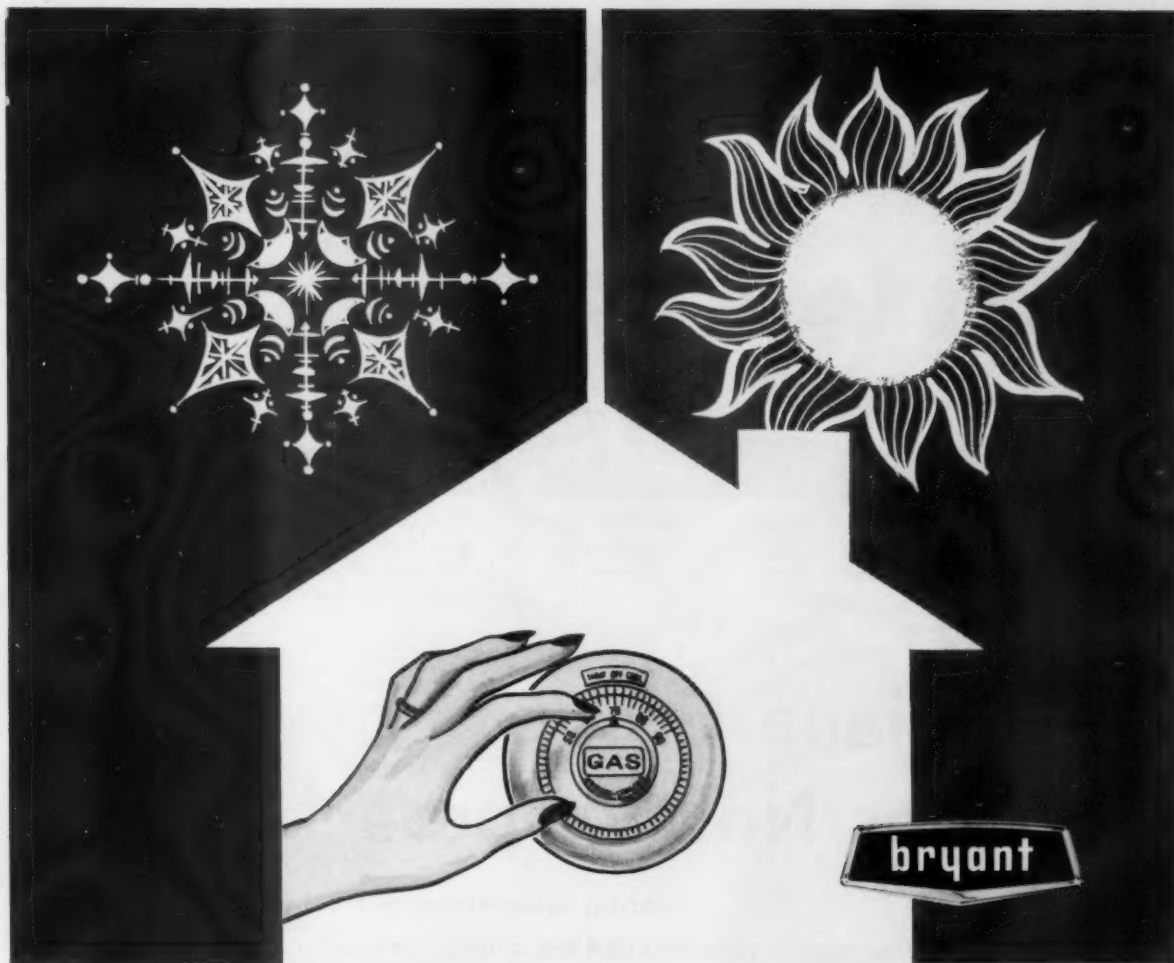
Quotes Prior Decision

In an instance a few years later, another federal court made a similar comment on circumstances, such as these, where the objections to an account were not made until forced into the open by a lawsuit.

"The many principles with reference to an account stated are well settled, and so far as we are able to ascertain no court has ever varied from them. In a general way, it is said, an account stated is an agreement between parties who have had previous transactions of a monetary character, that all the items of the account representing such transactions and the balance struck are correct with a promise, expressed or implied, for the payment of such balance.

"It is, of course, necessary that some kind of statement of the account must be rendered, and there must be an admission by one party of the correctness of the balance struck by the other, or other evi-

(Continued on page 126)



DEPENDABILITY

The most important feature in air conditioning today!

And a Bryant Gas air conditioning system is *truly* dependable.

Because it's Gas, weather will not disrupt service, especially on hot, hot days when it's needed most. Because it's Gas, neither you nor your customers will be bothered with excessive costs, excessive maintenance. For

example, a Bryant add-on Gas cooling unit installs outdoors, uses no high amperage wiring, no valuable floor space, no water tower. And, because it's Bryant, you are backed by a company with over 50 years experience in home comfort . . . now a leader in air conditioning.

Bryant Gas air conditioning can be depended upon to furnish *whole house* comfort—all year round. And *nothing* cools more comfortably, more quietly, than Gas. Ask your Gas company for details.

AMERICAN GAS ASSOCIATION



Bryant Gas air conditioning cools with an even flow of air, filtering out pollen and dust. Responds instantly to temperature changes—operates *quietly*.



A flip of one switch gives *coolness* in summer, *warmth* in winter—with compact Bryant Gas furnace (*fits in closet-size space!*) plus Bryant add-on Gas cooling unit.

**LIVE MODERN
FOR LESS
WITH...**


GAS

WHAT ASSOCIATIONS ARE DOING



PANELISTS FOR THE INDUSTRY COORDINATION FORUM at the Indiana association's 43rd annual convention are (l to r): R. C. Whallon, Peerless Corp.; Harry Hurl, G. W. Berkheimer Co.; Phil Hedback, Bryant-Hedback Co.; J. W. Ridgway, Frankfort (moderator); Ray Boyd, Hall-Neal Furnace Co.; Wm. E. Garber, Farquar-Garber Co.; and Fritz Zurstadt, Evansville Sheet Metal Works

Indiana Group Uses New Approach

**... to bring out information from audience
as well as panelists at 43rd annual convention. Printed
questions, designed to encourage audience participation,
form the basis for this new type of session**

A NEW TYPE of convention session was introduced at the 43rd annual convention of the Sheet Metal and Warm Air Heating Contractors' Association of Indiana, held in Indianapolis last month. Two sessions based on announced subjects were opened to audience participation.

Discussion was under the guidance of a moderator and a group of panelists.

Both programs — each lasting an entire afternoon — were conducted along these lines. Mimeographed copies of questions relating to pertinent management sub-

jects were issued to each member of the audience on entering the room. (This same list of questions had been enclosed with the final convention call mailed one week earlier.)

The moderator read the ques-

(Continued on page 88)



PANELISTS for the business management forum are (l to r): J. R. Walker, South Bend; Fred Snyder, Lafayette; Clyde M. Barnes, Chicago (moderator); Howard Houchens, Gary; and Don McCloskey, Indianapolis

high output... minimum effort

SET NEW WORK STANDARDS



For work in the 15-60 ton range, here's your press brake: Niagara Inboard Drive Series 1B. Bends $\frac{3}{4}$ " material up to 6', and lighter gages to 14'.

Nothing like it. Has **everything**... to pay off in bigger production profits for you!

EVERYTHING'S INBOARD: Motor, belts, flywheel, clutch, brake, gears... yes, even connections, pitmans and ram adjustment mechanism... yet all accessible. Nothing protrudes.

SMOOTH, SENSITIVE ACTION: Ram can be micro-jogged smoothly, softly to a layout line... even through the work at full capacity, or stopped on a dime! Die setting is fast, easy.

RUGGED TO THE CORE: One-piece, welded steel frame with integral, wrap-around crown and extra deep, solid steel plate bed. Long lasting, laminated, non-metallic ways.

UNIFORMLY APPLIED POWER: Center drive for accurate work and die protection.

POWER CLUTCH, BRAKE & TREADLE: For greater production and less operator fatigue; or **manual clutch, brake & treadle** for low initial cost and quick, smooth response.

MUCH MORE, TOO: Adjustable speed drive, power or manual ram adjustment, front mounted control buttons, rocker type end guide bearings, centralized pressure lubrication, wide selection of gages, and numerous other features at your selection.

HERE'S THE WHOLE STORY: Wrapped up in new 12-page Bulletin 90... yours for the asking.



Streamlined, inboard drive

NIAGARA

PRESS BRAKES

NIAGARA MACHINE & TOOL WORKS
BUFFALO 11, N. Y.

District Offices and Distributors Everywhere

WITH THE ASSOCIATIONS

(Continued from page 86)

Indiana Convention Features Audience Participation Program

(Continued from page 86)

tion to be discussed, asked for comments from the floor, recognized each respondent in turn, then summarized the various points brought out. He then asked for comments from panelists whose experience qualified them to answer the questions and discuss the points brought up by the audience.

Questions Asked

Leading questions asked on the first afternoon were:

1) How important are full-time employees who concentrate on sales?

2) How important is an adequate display room?

3) Can you sell the job yourself and cut 10 percent from your price because no salesman's commission is paid?

4) Are the services performed by a salesman worth the amount of money necessary to pay him an adequate salary?

5) Should the dealer-contractor draw a net salary for his job as business manager or should he be satisfied with what's left at the end of the year?

6) How should the cost of doing business be applied?

7) Do poor collection policies of wholesalers and manufacturers tend to encourage the slow paying contractor to do his work for less?

8) Should jobs be taken during slow periods to keep employees working, or should employees be hired and laid off according to the volume of work on hand?

9) Should attractive bargains on four or six months supply of materials be grabbed or rejected? (If bargains are offered, what defi-

nition can be applied to establish that it is a bargain?)

10) Should a customer be given an allowance for used equipment?

11) What ratio should exist between a heating-cooling dealer's annual sales and the amount of stock carried in repair parts?

12) How far should a dealer-contractor go with a do-it-yourself customer?

13) If it is not possible to delegate responsibilities without increasing operating costs, expensive errors in judgment and poor quality work, how do you go about diversifying your operation?

Discuss Coordination

During the second afternoon audience participation program — directed toward industry coordination — these questions were investigated:

1) What kind of sales promotion pays off best for the sheet metal contractor?

2) How can the wholesaler help the dealer improve his collections?

3) How should the wholesaler's salesman conduct his visit to help the dealer-contractor most?

4) Wouldn't money spent on a corporate image be better spent at the local level to promote the heating and air conditioning dealer-contractor and his service?

5) What are the advantages and disadvantages of exclusive dealerships in a community?

Urge Similar Approach in '62

Audience reaction to this type of convention session and its ap-

(Continued on page 92)

Metal Ventilator Institute Gets New President

MILWAUKEE — Warren J. Schmidt has been elected president of the Metal Ventilator Institute. He is product development engineer for the Sheet Metal Products Div. of Inland Steel Products Co.

Name Winners In New York State Contest

SYRACUSE, N. Y. — "A training program that will assure a continuous supply of highly skilled sheet metal journeymen is needed now more than at any time during the past 12 years," said Joseph R. Stiglmeier, chairman, New York State Apprenticeship Committee, in presenting awards to winners in the recently completed state apprenticeship contest.

He pointed out that due to death and retirement of journeymen sheet metal workers in New York, the state needs about 1500 apprentices in training continuously. "There are now approximately 900 in training," he said, "which means we are producing about 240 new journeymen a year.

He urged both unions and employers to intensify their training programs, pointing out that labor and management "share the responsibility for staffing the state's work benches with qualified men."

Winner in the first year category was Tony Rogala, local 83. Second year winner was William L. Nowak, local 71; third year, Edward Ansbrow, local 71; fourth year, C. Umfreyville, local 71.

(More association news on page 92)

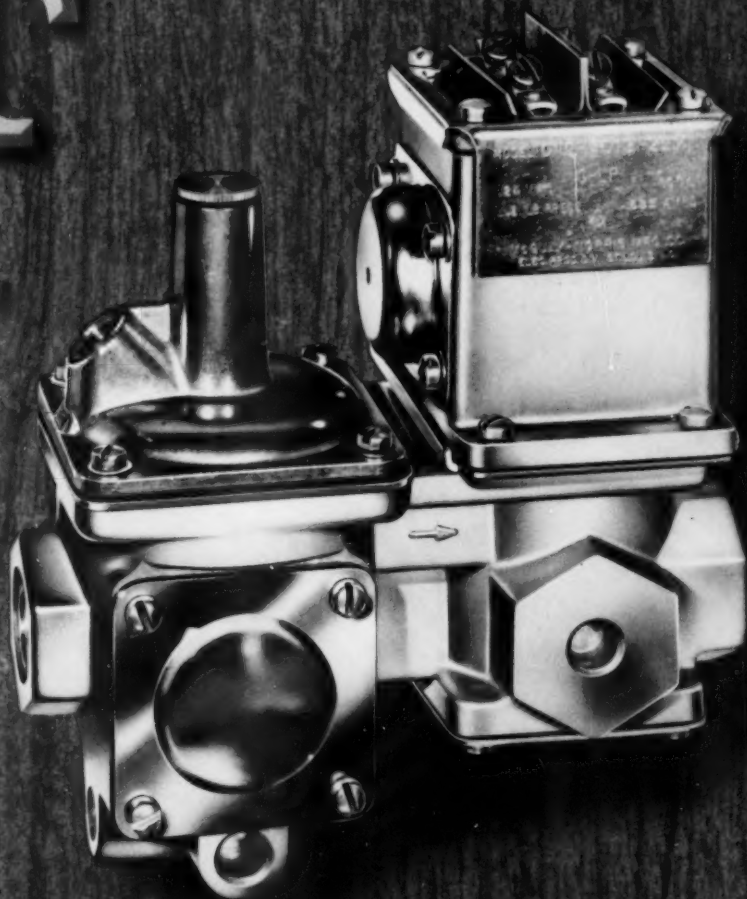
FINEST FOR HEATING!

THE FAMOUS

**McQUAY
NORRIS**

“QET”

**THE MOST MODERN
COMBINATION
SILENT GAS VALVE
AND REGULATOR
YOU CAN INSTALL**



**ALSO SPRING-LOADED,
SOFT-SEAT SOLENOID VALVES.**

**NOTE: Spring-Loaded,
Soft-Seat Valves were originated**

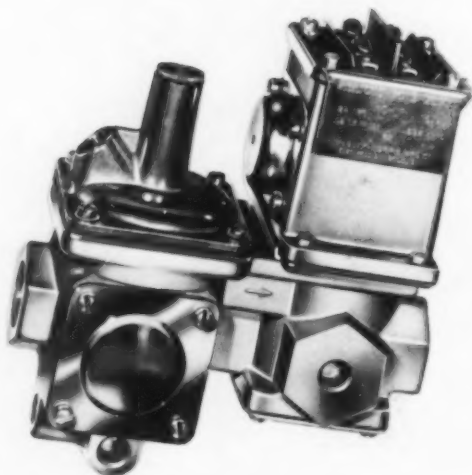
by McQUAY

“QT” QUALITY...

CUTS DOWN SERVICE CALLS

Thousands upon thousands of installations prove the ability of the McQUAY-NORRIS “Q-T” Combination Valve and Regulator to do its job day-in and day-out without a hitch. When you install a McQUAY-NORRIS “Q-T” Unit you are assured of maximum Dependability.

BUILT FOR DEPENDABILITY



by
McQUAY-NORRIS



McQUAY-NORRIS MANUFACTURING CO., Electric Products Division, St. Louis 10, Mo.

51 YEARS IN THE MANUFACTURE OF PRECISION PRODUCTS

Copyright 1961 McQuay-Norris Manufacturing Co.





The Zinc Stays on Tight

If you really want to see how tightly the protective zinc coating is bonded to ductwork made of USS Galvanized Steel Sheets, check it with a magnifying glass. We've saved you the trouble of looking for a glass by doing just that in this *unretouched* photograph.

Notice that the zinc coating is smooth and tight, even after the sheet has been bent and rebent into a Pittsburgh lock seam. You'll find USS Galvanized Sheets don't flake

even if you make deep draws, handkerchief folds, sharp bends or punch holes. And USS Galvanized Sheets are strong. You can span greater distances using fewer supports and joint seams. This means lower installation costs. Lock joints stay tight, too, so expansion and contraction noises are reduced. Specify USS Galvanized Steel Sheets on your next ductwork job. *USS is a registered trademark*



This mark tells you a product is made of modern, dependable Steel.

United States Steel Corporation—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
American Steel & Wire—Cleveland
United States Steel Supply—Steel Service Centers
United States Steel Export Company
United States Steel



WITH THE ASSOCIATIONS

(Continued from page 88)

Rochester Group Elects Officers

ROCHESTER, N. Y. — Members of the Registered Air Conditioning, Ventilating & Heating Contractors Association Inc. met recently to elect officers for 1961. Anthony Cristao was named president; Carl D. Santangelo and Joseph Antinoro, vice presidents; Nicholas S. Meli, treasurer; Justin Stornelli, recording secretary; Robert E. Taylor, corresponding secretary; and Richard O'Grady, sergeant-at-arms.

Indiana Dealers Join in Program At Annual Convention

(Continued from page 88)

proach to the solution of management problems indicated that more valuable information had been presented in less time than is normally required at a convention session. Recommendations to repeat this type of program at the 1962 convention were made to the new officers who are:

President, Ben Flock, Hammond; first vice president, Fred Snyder, Lafayette; second vice president, John Kuharic, Mishawaka; treasurer, J. R. Walker, South Bend; secretary, H. W. Meggs, New Castle.

New directors are: Donald McCloskey, Indianapolis; Robert D. Boussum, Fort Wayne; Robert Jacobi, Indianapolis; J. W. Ridgway, Frankfort; William E. Garber Jr., Indianapolis; A. V. Hazelton, Muncie; Tom Daily, Hammond; and John Weyler, Huntington.

Sergeants-at-arms are Howard Houchens, Gary, and Otto Schnackenberg, Evansville. Ed. Lewis, Indianapolis, is executive secretary.

Canadian Dealer-Contractors Sign Up For 1961 Indoor Comfort Schools

TORONTO — The National Warm Air Heating and Air Conditioning Association of Canada held the first of its 1961 Indoor Comfort schools at London, Ont. This was followed by a school at Vancouver, one at Calgary and another at Saskatoon.

Other schools and their chairmen are as follows:

Winnipeg, Mar. 27-30. R. P. Campbell, Campbell Heating Co., 1475 Wellington Ave., Winnipeg 3.

Sudbury, Apr. 17-20. A. Bell, Simpson & Bell Plbg. Ltd., 38 Beech St., Sudbury, Ont.

Ottawa, May 1-4. N. Hall, Hall Fuels Ltd., 333 Preston St., Ottawa, Ont.

Quebec, May 8-11. Pierre Thi-

bault, Imperial Oil Ltd., Quebec City.

Fredericton, May 15-18. D. Hagerman, J. Clark & Son, Fredericton, N. B.

Truro, May 23-26. E. McMurtrey, Electrical Distributors Ltd., 799 Prince St., Truro, N. S.

The schools are open to all members of the association and their employees. Subjects scheduled for study include Heat Loss Principles; Heat Loss Calculations; Principles of Air Distribution; Perimeter Application in Concrete Floors; Modernization (Method of Conversion and Sizing of Distribution and Return Systems); and Combustion, Ventilation Requirements and System Balancing.

Belisle Elected St. Paul President

ST. PAUL — Members of the Air Conditioning & Heating, Roofing & Sheet Metal Contractors Association of St. Paul met recently to elect new officers and directors. Ervin Belisle, Sheet Metal Specialty Co., was elected president. Other new officers are: Roger Meyer, Daytons Bluff Sheet Metal, vice president; Fred Krinkie, The Snelling Co., secretary; and Herman Hertzner, Ettel & Franz Co., treasurer. Directors are: James Ferrara, Standard Heating Co.; George Hansen, Hansen Roofing & Sheet Metal, Inc.; Joseph F. Murray Jr., Preferred Sheet Metal; LeRoy Peters, Ace Heating Co., Inc.; and C. P. Neil, Neil & Hubbard Heating & Air Conditioning Co.

Poja to Head Milwaukee Group

MILWAUKEE — M. Poja was recently elected president of the Sheet Metal Contractors Association of Milwaukee. Serving with him are A. G. Mantei, vice president; Les Fenlon, secretary; Frank Kramer, treasurer; A. Sokolowski, sergeant-at-arms; and R. S. Schmieder, executive secretary. Directors, in addition to the officers, are J. Pflugradt, L. O'Leary, Brad Hoffmann, Stanley Gelhaar, George Memmel, and Leroy Schultz.

New committee chairmen are Angelo Hoffmann who will head the architectural sheet metal committee; A. T. Ihde, labor relations; Robert Schomann, ventilating; and Ben Brozek, warm air heating and air conditioning.

(More association news on page 94)



Terminal Building, Galesburg Municipal Airport, Galesburg, Illinois. Contractor: Galesburg Construction Company. Architect: West & Weber. Heating Subcontractor: Galesburg Sheet Metal Works.

High efficiency duct that's easier to install

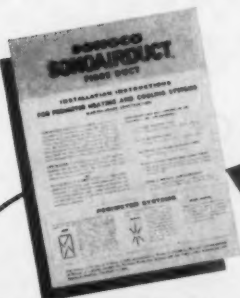
SONOCO
SONOAIRDUCT®
FIBRE DUCT

With its **HIGH** efficiency and **LOW** installation cost, SONOAIRDUCT Fibre Duct is the *economy answer*—for slab perimeter heating, cooling, or combination systems!

SONOAIRDUCT has an aluminum foil lining that offers minimum resistance to air flow. This lining, together with the thick fibre wall, provides a very low B.T.U. loss ratio. Result? In heating, more *warm* air is delivered from plenum to register... with no hot spots in the floor, either. SONOAIRDUCT possesses a sound deadening quality too, that means a quieter system, a quieter building.

Another thing—owners and contractors like the ease and speed of installing SONOAIRDUCT Fibre Duct. It's lightweight for fast leveling and joining, long lengths mean fewer joints, and it's easily cut to size or mitered with a hand saw. Won't chip, crack, or break when dropped—every piece is usable.

For efficiency and economy, use Sonoco SONOAIRDUCT Fibre Duct on slab perimeter jobs. Low in cost, it meets or exceeds all F.H.A. criteria and test requirements for products in this category. 23 sizes, 2" to 36" I.D., standard 18' lengths.



FREE INSTALLATION MANUAL

Contains latest, detailed, step-by-step installation data for SONOAIRDUCT Fibre Duct. For free copy, send us your name and address on company letterhead.

See our catalog in Sweet's, or write for complete information and prices to

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Construction Products

SONOCO PRODUCTS COMPANY, HARTSVILLE, S. C. • La Puente, Calif. • Fremont, Calif. • Montclair, N.J. • Akron, Indiana • Longview, Texas • Atlanta, Ga. • Ravenna, O. • Brantford, Ont. • Mexico, D.F.

Propose Amendments to Columbus Electrical Code

COLUMBUS, O. — Featured at the general membership meeting of the Heating, Air Conditioning and Sheet Metal Association of Columbus was a report by the group's code committee of the public hearing held before the Columbus Building Commission relating to proposed changes to the city's electrical code as presented to the commission by the Electrical Contractors Association. Members of the heating association attending the hearing were Allen McKnight; Art Bogen; and Robert E. Holmes, executive secretary. When the heating and air conditioning industry was asked to comment on the proposed code changes, Mr. McKnight presented the following objections:

1) Our association believes that the intent of the code, as written, shows an unwillingness to use existing mechanisms whereby electrical contractors can do heat-

ing work, namely, to pass a heating contractor's examination.

2) The new code, as written, shows an attempt of an arbitrary "take over" of trades without the necessary background of skills on the part of the electricians to support the usurping of the rights and skills of another trade.

3) By the apparent unwillingness of the electrical group to use existing mechanisms to put them in the heating business, electricians have slowed up the application of electric heating.

4) If this usurping of the prerogatives of other trades is permitted, it will create a precedent wherein another group may try to take over a portion of an existing trade.

5) It would appear, as the electrical code is written, that heating is only a function of kilowatts and wiring, which is certainly not the case, any more than proper combustion is the only requirement of heating with other fuels.

Following the hearing, a meeting was held between members of the association's code committee and members of the Electrical Contractors Association to explore more fully the significance of the proposed code changes.

Another feature of the Columbus association's general membership meeting was the presentation of a 15 minute color and sound film prepared by the Air Conditioning and Refrigeration Institute. It was suggested that the film, "Sales Arguments for Central Residential Air Conditioning," might be used as a sales tool to promote central residential air conditioning to home builders.

Begin Group 3 Of Oil Heat Service Schools

BOSTON — The Oil Heat Institute of New England will open Group 3 of its oil heat service schools on Monday, March 27, in Waltham, Mass.; Tuesday in Springfield, Mass.; Wednesday in Hartford, Conn.; Thursday in New Haven, Conn.; and Friday in Peabody, Mass. The nine-week course is designed to keep servicemen up to date on new equipment and new service methods. Each subject is presented from a purely service standpoint, according to the association, and no effort is made to influence the student to develop preference for one product over another. Each instructor is a recognized authority in his subject.

Subjects scheduled include low pressure oil burners; combustion and efficiency determination; fuel pumps and fuel units; and stack controls, electronic relays and thermostats.

If further information is desired, contact Hollis L. Farrow, director of education, Oil Heat Institute of New England, 330 Stuart St., Boston 16.

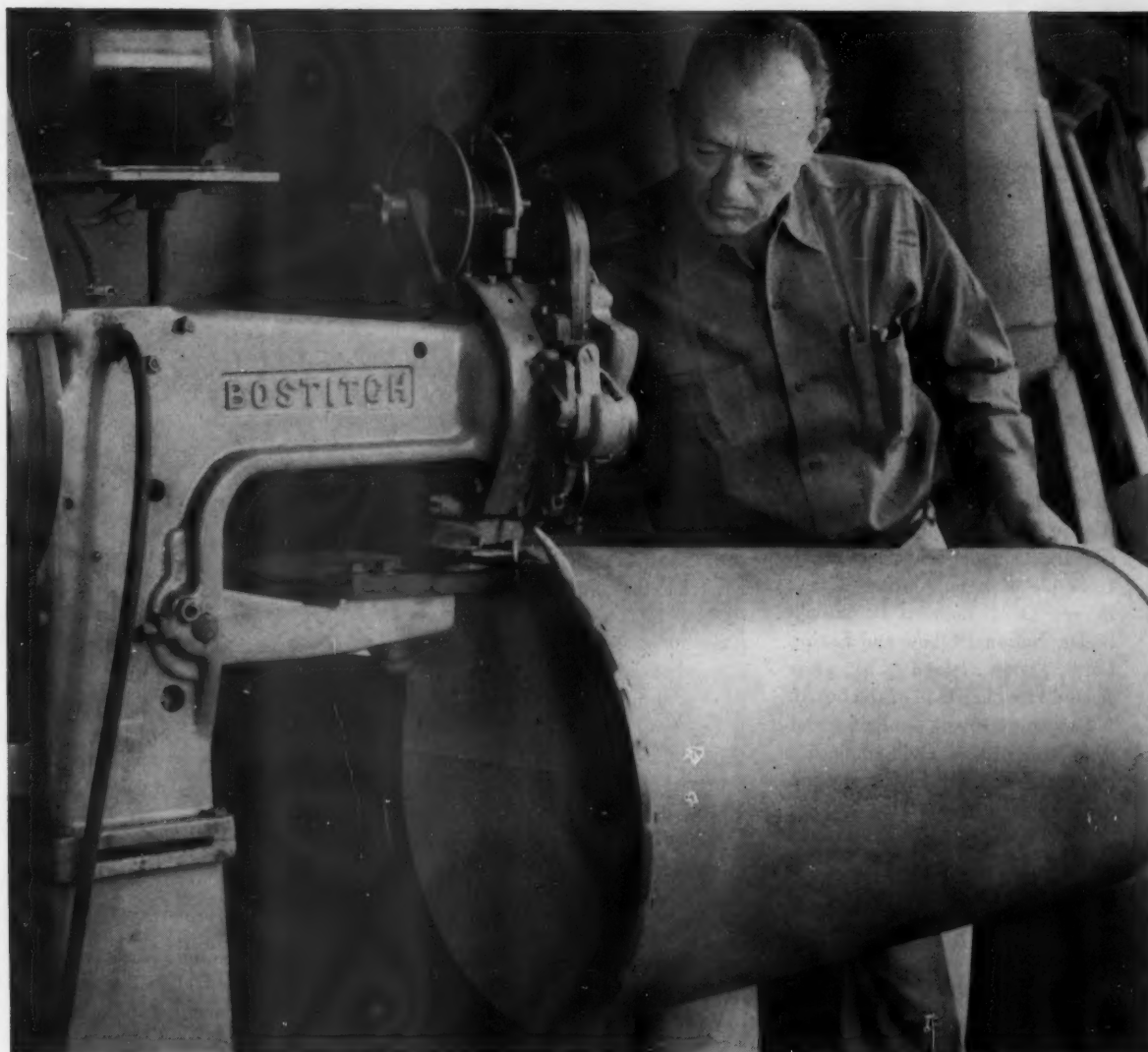
Elect Graving At Minneapolis

MINNEAPOLIS — Robert Graving, Sheridan Sheet Metal Co. was elected president of the Air Conditioning & Heating-Roofing & Sheet Metal Association of Minneapolis at the association's recent annual meeting. Named vice president was Fred Vogt, Fred Vogt & Co.; secretary, Ray Kraus, General

(Continued on page 96)

Air Conditioning Group Holds Election Meeting

CHICAGO — Albert Verbeek, Verbeek Heating Co. was elected president of the Air Conditioning Contractor's Alliance at the group's recent annual meeting. Henry Repple, Flo-Rite Heating & Ventilating Co. was elected vice president, and Edward Berg, Al-laden Engineering Co., treasurer. Directors are Edward Stahler, Robinson Furnace Co.; Robert Johnson, Atomatic, Inc.; Herb Tanis, Ridgeway Heating & Air Conditioning Service; and William Masoner Jr., Inland Furnace & Air Conditioning Co.



60% INCREASE IN PRODUCTION VOLUME WITH BOSTITCH WIRE STITCHING

Bostitch wire stitching is used to fasten double seams and attach bottom and top metal rims of 33-inch industrial waste receptacles made of untempered Masonite.®

Since switching from riveting to Bostitch stitching, this manufacturer's records show a 60% increase in production volume and a 50% cut in cost of fastening materials, making it a very worthwhile investment.

This automatic Bostitch metal stitcher enables work-

ers to produce neat, secure seams quickly and easily. No pre-punching, pilot drilling, or redrilling on assembly is necessary. Staple is formed, exactly placed, driven and clinched in 1/5 of a second. "Sandwich" arrangements of various metals and non-metallic materials can be handled even by inexperienced operators.

Let a Bostitch Economy Man help you cut costs, increase profits. Call the Bostitch office in your city.

Fasten it better and faster with

BOSTITCH®
STAPLERS AND STAPLES

943 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND

WITH THE ASSOCIATIONS

(Continued from page 94)

Thomson to Head Roof Drainage Institute

CHICAGO — Election of new officers for the coming year and adoption of an augmented promotional program were highlights of the recent annual meeting of the Roof Drainage Manufacturers Institute. Elected chairman of the board was Alexander Thomson, Tanner and Co., Indianapolis, who succeeds R. L. Seiple of Republic Steel Corp., Berger Div., Canton, O. Joseph Bieler, National Elbow and Fitting Corp., Long Island City, was elected vice chairman of the board.

The augmented publicity and promotion program will emphasize quality assurance in purchasing products from member companies.

Minneapolis Dealers Hold Election Meeting

(Continued from page 94)

Sheet Metal Co.; and treasurer, Paul Tente, W. J. Kruckeberg Roofing & Sheet Metal Co.

Outgoing president John Somers of Central Roofing Co. presented "award of service" plaques to board members Jay Quade, Commercial Air Conditioning Co.; Lowell Anderson, Cronstrom's; Richard Sievert, W. A. Sievert Roofing Co.; Frank Liljemark, Plews Oiler; and Noel Girard, Girard Steel Supply Co.

Directors selected for 1961 are: Earl Bruder, Domestic Heating Co. (domestic section); Lynn Thomas, Thomas Air Conditioning (commercial section); Bernie Dalsin, B. L. Dalsin Roofing Co. (roofing); Howard Holmberg, Nokomis Sheet Metal Co. (general); and Bob Bennett, A. H. Bennett Co., (supplier).

Indiana Association to Sponsor Legislation for Small Claims Court

INDIANAPOLIS — The Sheet Metal and Warm Air Heating Contractors Association of Indiana plans to sponsor legislation creating a small claims court in the 1961 session of the Indiana General Assembly, according to the association's legislative committee.

The new court would be designed to reduce the costs of collection of amounts less than \$500.

Under the present system, according to the committee, the expense of attorney's fees and court costs makes the collection of small sums prohibitive.

The proposed small claims court would be modeled after similar courts existing in other states, and

the claimant will not require an attorney to expedite his case.

The association points out that heating and sheet metal contractors should find such a small claims court to be a great assistance in collecting small accounts.

Shreveport Names Officers

SHREVEPORT — Officers for 1961 were elected by the Shreveport Association of Residential Air Conditioning and Heating at the group's recent annual meeting. Named president was Durward W. Aiken Jr., Dixieaire Air Conditioning Co.; vice president, A. B. Black Jr., Blackie's Tin Shop; and secretary-treasurer, Herman L. Meyer, Radelec Inc.

In accepting the presidency, Mr. Aiken stated that the association is now forming an Indoor Comfort bureau.

GAMA Elects New Member

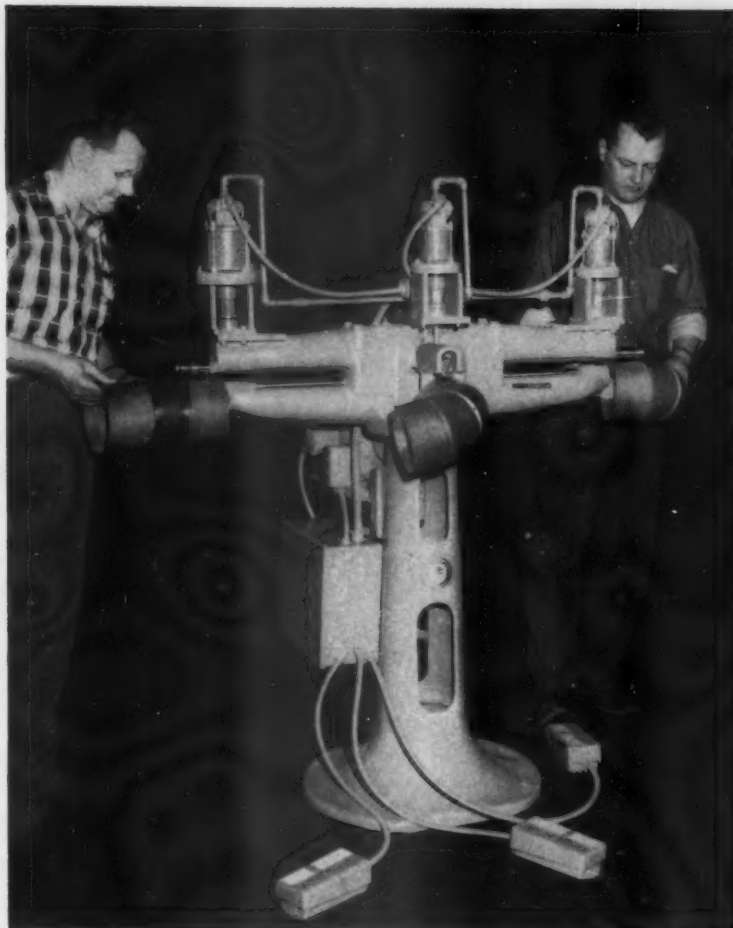
NEW YORK CITY — The Thermo-electric Products Group of Minnesota Mining and Mfg. Co., St. Paul, has been elected to membership in the Gas Appliance Manufacturers Association. According to Harold Massey, managing director of GAMA, the association's membership now totals 580 manufacturing firms, which produce 95 percent of all household, commercial and industrial gas equipment made in the United States today.

(More association news on page 98)

Discuss Air Cleaners At Kalamazoo Meeting

KALAMAZOO — The "Air Cleaner Story" was presented at the February meeting of the Kalamazoo Heating & Air Conditioning Association. Gene Korlevich, Minneapolis-Honeywell Regulator Co., demonstrated the operation of an electronic air cleaner, explained sales points and answered questions.

Association members recently approved a recommendation that the current "reminder of meeting" sheet be developed into a "newsletter," which will contain news from wholesalers and, dealer-contractors, news of legislative action affecting the heating and air conditioning industry, reports of previous meetings, etc. Appointed to gather information for the newsletter were Bernard Sehy (wholesaler news); E. J. French (contractor news); and Fred Madaus (city hall).



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ONE MINUTE!***

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*with EXCLUSIVE AIR-CYLINDER
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DIVISION OF ROCKFORD MACHINE TOOL CO.
2500 KISHWAUKEE STREET ROCKFORD, ILL.

WITH THE ASSOCIATIONS

(Continued from page 96)

Coming Events

(Additional Listings on Page 100)

March

Mar. 23-25 — Southeast Trade Exposition sponsored by Sheet Metal, Roofing, Heating, Air Conditioning Contractors' Association of Georgia. B. L. Noblitt, executive secretary, 208 Red Rock Bldg., Atlanta 3.

April

Apr. 6-7 — Sheet Metal, Air Conditioning and Roofing Contractors Association of Illinois, annual convention. Pere Marquette Hotel, Peoria, Ill. M. P. Lauerma, secretary, 237 E. Tompkin St., Galesburg, Ill.

Apr. 10-12 — National Warm Air Heating & Air Conditioning Association of Canada, annual convention. Seaway Hotel, Toronto. T. A. Clark, general manager, 4195 Dundas St., W., Islington, Ont.

Apr. 13-15 — Gas Appliance Manufacturers' Association, annual convention. Boca Raton Club and Hotel, Boca Raton, Fla. Gas Appliance Manufacturers' Association, 60 E. 42nd St., New York 17.

Apr. 19-21 — National Association of Sheet Metal Distributors, spring convention. Sheraton-Cleveland Hotel, Cleveland. Thomas A. Fernley Jr., executive secretary, 1900 Arch St., Philadelphia 3.

Apr. 21-24 — Roofing & Sheet Metal Contractors Association of Florida. SS Bahama Star, en route to Nassau. F. D. Wesley, managing director, P. O. Box 1044, Lakeland, Fla.

Apr. 23-26 — Oil Heat Institute, annual convention. Statler-Hilton Hotel, Washington, D. C. Charles R. Burkhardt, managing director, 500 5th Ave., New York 36.

Apr. 24-26 — Sheet Metal and Air Conditioning Contractors' National Association, annual convention. Ambassador Hotel, Los Angeles. J. D. Wilder, executive secretary, 107 Center St., Elgin, Ill.

Apr. 28-29 — Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania, annual convention. Benjamin Franklin Hotel, Philadelphia. Earl W. Liebermann, secretary, 1411 Merchant St., Ambridge, Pa.

Florida Directors Hear Reports On Self Insurers Fund, Safety Film

DAYTONA BEACH — A substantial dividend is likely to be paid by the Self Insurers Fund of the Roofing & Sheet Metal Contractors Association of Florida, according to a report presented at a recent board meeting by Laird Legg. Twenty of the association's 26 officers and directors were in attendance at the meeting, which was held at Daytona Beach's Ridgewood Hotel.

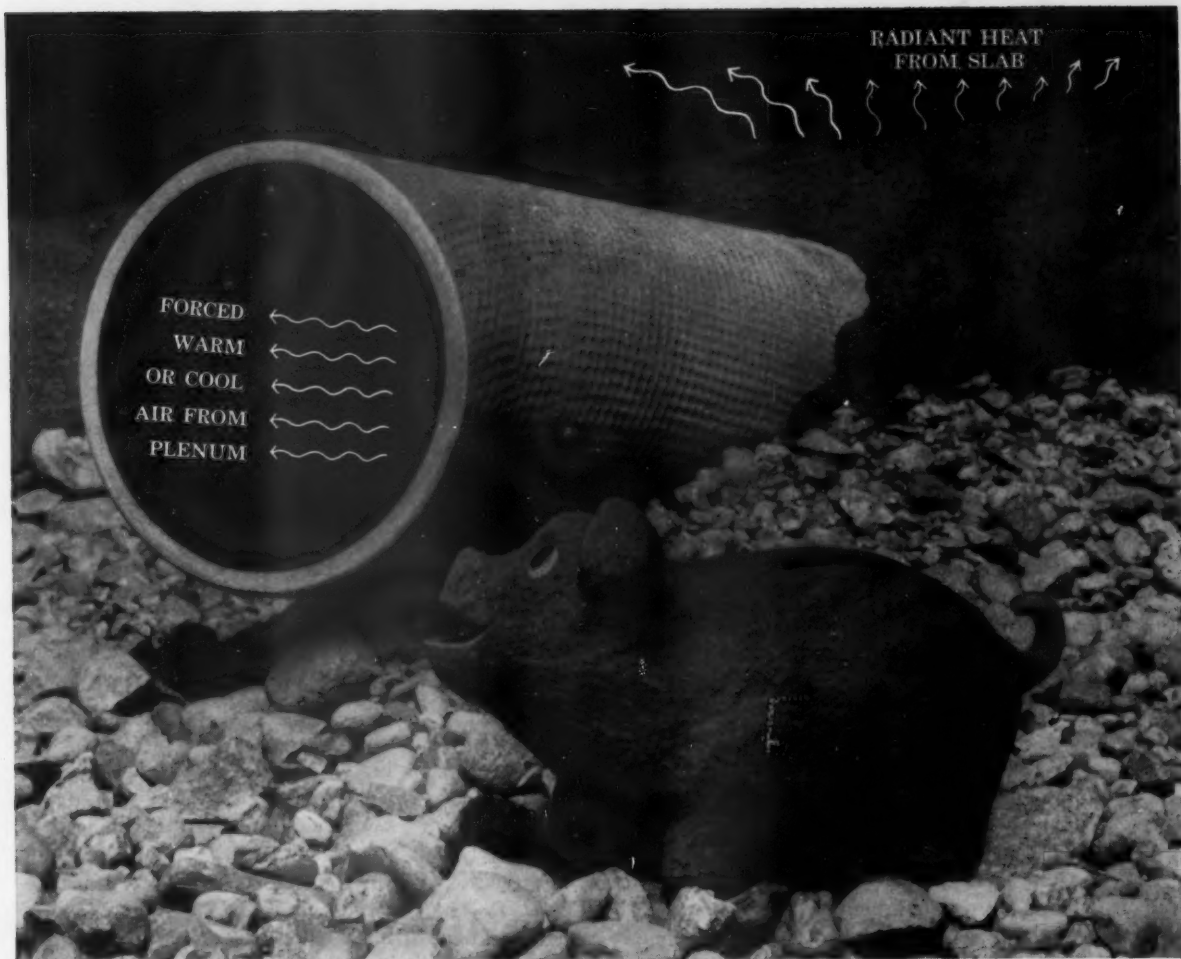
During the course of the meeting, the board 1) approved plans for a sheet metal safety film sub-

mitted by safety chairman David Hess; 2) approved president Strong's appointment of Wyley Shepherd, Victor Kinsey and Howard Carpenter as the 1961 convention committee; 3) instructed executive secretary Frank Wesley to write Governor Farris Bryant urging appointment of a roofing and sheet metal contractor to the State Apprenticeship Council; and 4) heard membership chairman Mack Fillingham report that contractor membership now stands at 133.

Research Group Discusses Selling, Management

HIGH POINT, N.C. — Sessions on industry management problems and techniques of selling featured the recent convention of the Heating and Air Conditioning Research and Development Association held at the Sheraton Hotel, High Point, N.C. Speakers discussed new management methods, selling vs bidding, how to sell the homeowner, and how to increase annual sales volumes.

(More association news on page 100)

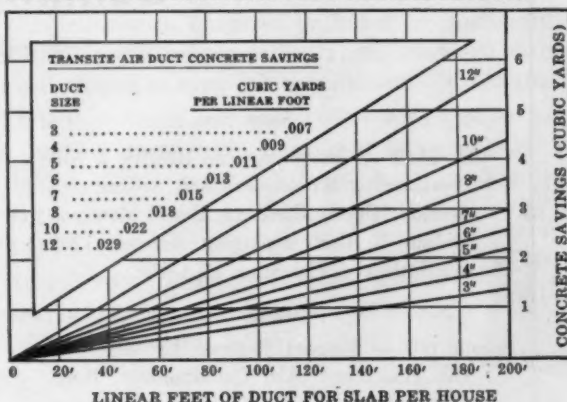


Save up to \$85 on the installed cost of slab-on-grade perimeter heating systems!

Slab perimeter heating is rapidly gaining the acceptance of builders throughout the country. They appreciate the value of this system which provides the double heating benefit of radiant and forced warm air. These same builders have made Transite® Air Ducts the standard in the industry. They have discovered that Transite helps make perimeter heating more profitable for them.

Because of its strong asbestos-cement structure, Transite *needs no concrete encasement*. This means substantial concrete savings (see chart). Further, Transite requires no anchoring because it cannot float. Its long, 10-foot lengths mean fewer joints and faster installation. What's more, fittings can be made right on the job. Being non-metallic, it's corrosion-resistant and odorless, too! This combination of benefits can reduce installed costs as much as \$85 per job for *you*! For further details on Transite for perimeter heating and cooling, write Johns-Manville, Box 14, AA-3, New York 16, N. Y. In Canada: Port Credit, Ontario. Offices throughout the world. Cable address: Johnmanvil.

MINIMUM CONCRETE SAVINGS USING TRANSITE AIR DUCT



JOHNS-MANVILLE
TRANSITE AIR DUCT



WITH THE ASSOCIATIONS

(Continued from page 93)

Expect 2000 At Southeast Trade Show

ATLANTA — Some 2000 dealer-contractors, architects, engineers and others interested in the heating, air conditioning, sheet metal, roofing and insulation fields are expected to attend the Southeast Trade Exposition scheduled March 23-25 at the Atlanta Biltmore Hotel, Atlanta, Ga. The sponsoring organization — the Sheet Metal, Roofing, Heating and Air Conditioning Association of Georgia — believes the show will attract visitors from several eastern and midwestern states as well as industry representatives from Alabama, Florida, Georgia, Mississippi, Tennessee, North and South Carolina. Product displays will occupy the hotel's entire exhibition facilities comprising about 14,000 sq ft of space.

In addition to the show, numerous other events have been scheduled, including forums, technical sessions, and numerous social activities.

Tentative program plans call for the following presentations:

"New Designs and Applications," by Allen Trask, chief engineer, International Heater Co. Mr. Trask will discuss recent improvements in air conditioning equipment designed to facilitate installation; adding summer air conditioning to existing heating systems; and future possibilities of electric heating.

"Present and Future Trends in Sheet Metal Labor," by J. D. Wilder, executive secretary, Sheet Metal & Air Conditioning Contractors' National Association. Mr. Wilder will explain how labor trends will affect both union and non-union shops.

"Vapor, Vapor Pressures, Condensation, and Moisture Control," by Professor C. E. Lund, University of Minnesota. Professor Lund, using slides to illustrate his talk, will show how condensation problems develop and will explain how

to correct such situations.

"Selling in the Soaring Sixties," by O. U. Mutz, vice president and sales manager, Peerless Corp. Mr. Mutz will describe various techniques that have proven to be successful in building up annual sales volumes.

Other speakers scheduled include Jack Strong, president, Roofing and Sheet Metal Contractors Association of Florida; Dennis Monroe, vice president, Roofing, Sheet Metal, Heating & Air Conditioning Contractors Association of Alabama; Ralph C. Dodson, president, Mechanical Contractors Association of Atlanta; and Rogers Toy, a director of Sheet Metal and Air Conditioning Contractors National Association.

A Builtup Roofing Forum, scheduled for March 25, will cover such subjects as New Products, Trends Toward Increased Mechanization, and New Architectural Designs.

Coming Events

(Continued from page 98)

May

May 21-23 — Northamerican Heating & Air-conditioning Wholesalers, Inc., spring convention. Queen Elizabeth Hotel, Montreal. Wilbur R. Bull, managing director, 1200 W. Fifth Ave., Columbus 12, Ohio.

June

June 6-8 — Eastern Biennial Exposition of Oil Heat and Air Conditioning. Hotel Statler-Hilton, Boston. C. H. Fay, executive secretary, Oil-Heat Institute of New England, 330 Stuart St., Boston 16.

June 29-July 1 — Carolinas Roofing & Sheet Metal Contractors Association, annual convention. Ocean Forest Hotel, Myrtle Beach, S.C. H. J. Stockard Jr., executive secretary, Raleigh, N.C.

November

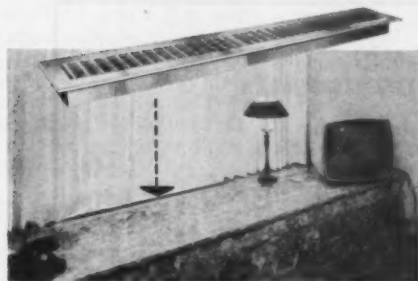
Nov. 6-8 — National Warm Air Heating and Air Conditioning Association, 48th annual convention. Hotel LaSalle, Chicago. James M. Martin, managing director, 640 Engineers Bldg., Cleveland 14.

These diffusers have beauty plus "brains"



Wide-flange diffuser with steel core for in-the-floor installation.

... only Barber-Colman
continuous-line air diffusers
have the exclusive
Uni-Flo engineered core
that provides truly
controlled air distribution



Narrow-flange model with aluminum core for sidewall, soffit, or sill installation.

Barber-Colman continuous-line diffusers are far more than a simple grating that "pours" a stream of air into the room. The exclusive Uni-Flo core design correctly controls diffusion, air pattern, direction, and sound—eliminates drafts and discomforts that cause expensive call-backs. They are guaranteed to perform in accordance with published laboratory performance data—to assure results that meet human comfort requirements.

Frames are aluminum with anodized or baked enamel finishes. Aluminum or steel cores are available. Three standard frames, as well as special shapes to meet job requirements, are available. Model ST with narrow flange and Model STW with a wider flange are available in 1½" through 6" height, in increments of ½". Wide-flange Model STWA features horizontal adjustment of air pattern to right or left. It is supplied in heights from 2" to 12" in increments of 1".

Install attractive Barber-Colman continuous-line diffusers on your next job for greater assurance of customer satisfaction. Write for Bulletin F-7757.



BARBER-COLMAN COMPANY

Dept. O-1106 Rock Street, Rockford, Illinois

EQUIPMENT DEVELOPMENTS

INFORMATION on capacities, dimensions, applications, and special features in each Equipment Development item is presented in accordance with material furnished by the manufacturers.

Elbow Cheek Cutter Speeds Production

"CHEEKMASTER" ELBOW CHEEK cutting machine turns out cheeks for rectangular elbows quickly and accurately. The machine can be set in seconds to produce cheeks having a radius of from 3 to 12 in. and an opening of from 3 to 30 in.

Thirty-six inch steel slide is notched at 1 in. intervals. Numbers are etched to withstand wear.

No layout is required and the cutting is done by a built-in electric shear. Taper elbow cheeks, as well as circles, can also be fabricated on the machine, which automatically allows for flanges and slip locks in the finished cheek—*Duro Dyne Corp., Route 110, Farmingdale, N. Y.*

Gas Flow Assembly Has Three Control Settings

UNITROL 110-ERB gas flow control is designed to meet the varying heating demands of spring and fall weather as contrasted with peak winter demands.

According to the manufacturer, the assembly provides an easily accessible and controllable means of varying gas input to the fur-

nace by varying the regulated outlet pressure.

The "Heat Set" control can be set at "normal" when it is desired to attain approximately 60 percent of maximum input, or at "high" when a 100 percent input is required.

The control assembly allows for adjustment of fuel input rates to closely match building heat loss during other than design conditions, thus reducing the possibility of "overshoot" in mild periods.

The control assembly is also available with an optional "soft ignition" feature which provides an initial reduced input for ignition, with a time delay before full

input for a particular regulator setting. All controls have stops at extremes of regulator adjustment to prevent manual rotation beyond limits—*Robertshaw-Fulton Controls Co., 911 E. Broad St., Richmond 19, Va.*

Treated Cooler Pad Reduces Odors, Sag

"COOLPAD" EVAPORATIVE cooler filler media, especially treated to overcome odors and rapid deterioration, comes in rolls 36 in. wide and 20 ft long for trimming, and has been colored green as an identifying symbol of the manufacturer.

Odors and deterioration caused by fungi known as cellulose rotters have been reduced, according to the manufacturer, removing the cause of unpleasant musty odors, weakening of the pads, preventing sag and open spaces, and clogging of pumps and drains.

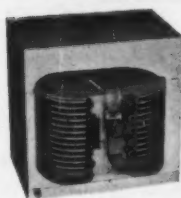
Green "Coolpad" is treated with a compound that inhibits the growth of these fungi, and is said to reduce deterioration of the media used in the pads.

Physical design of the product is of continuous slit and expanded fiber sheets sandwiched between exterior layers of slit and expanded aluminum—*Research Products Corp., 1015 E. Washington Ave., Madison 1, Wisc.*

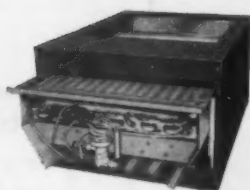
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- Appointments : 125

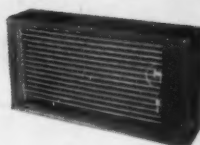
Upflow — Circular
2, 3, 4 or 5 Ton
Cooling Coil



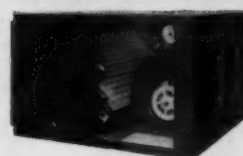
Counterflow
2, 3, 4 or 5 Ton
Cooling Coil



Horizontal-flow
2, 3, 4 or 5 Ton
Cooling Coil

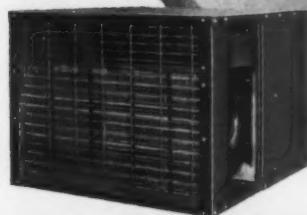


Air Handling
3, 4 or 5 Ton
Blower-Coil Unit



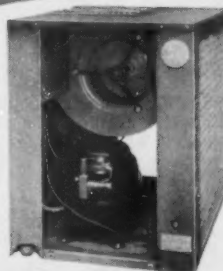
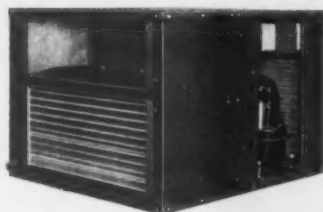
Luxaire Air Conditioning

**...BEST OF THE NEWEST
AND...COMPETITIVE
IN PRICE!**



NEW! SELF-CONTAINED UNITS

These new Air Cooled "Packaged" Units have 2 Centrifugal Blowers and 2 Motors, are approved for flush-to-wall indoor or unsheltered outdoor installation — 2 Ton (23,000 Btu/Hr) and 3 Ton (35,000 Btu/Hr) Net Capacities.



NEW! AIR CONDENSING UNITS

Now available in 2, 3, 4 and 5 Ton Capacities, these advanced new Condensing Units have low velocity top discharge from enclosed Propeller Fan. Other 3 and 5 Ton models equipped with Centrifugal Blower.

Something better, something extra, and low in price — this is Luxaire Air Conditioning — the extra something that will bring you extra business!

Extra-Heavy Construction — with Heavy Gauge, Zinc Coated Cabinets — in the 2, 3, 4 and 5 Ton complete line of Luxaire Air Cooled Condensing Units — and in the new 2 and 3 Ton Self-Contained Air Cooled Units!

Extra Flexibility — with Add-On Cooling Coils designed specifically for Upflow, Horizontal or Counterflow installations — with Air Handling Units designed for either horizontal or vertical discharge and bottom or end intake — and with Air Cooled Self-Contained Units approved for either flush-to-wall indoor, or unsheltered outdoor installation!

Extra Capacities — honestly rated in accordance with the best accepted standards.

Extra Trouble-Free — uncomplicated and easily serviced!

Extra Air Handling — for combination heating and cooling installations — with unsurpassed Luxaire Furnaces having standard equipment blowers with the necessary capacity!

Extra Competitive — with prices which, dollar per Btu, are as low as they come!

If you want to step ahead and stay ahead of competition in the growing business of air conditioning, see your Luxaire jobber, today!



Upflow Furnace
with Plenum
Coil — Gas, Oil
or Electric



Counterflow
Unit with
Counterflow
Coil — Gas,
Oil or Electric



Horizontal Furnace
with Duct Coil —
Gas, Oil or Electric



Water-Cooled
3 or 5 Ton
Self-Contained
Unit



Combination
Year 'Round
Unit — Air or
Water Cooled —
Gas or Oil Fired

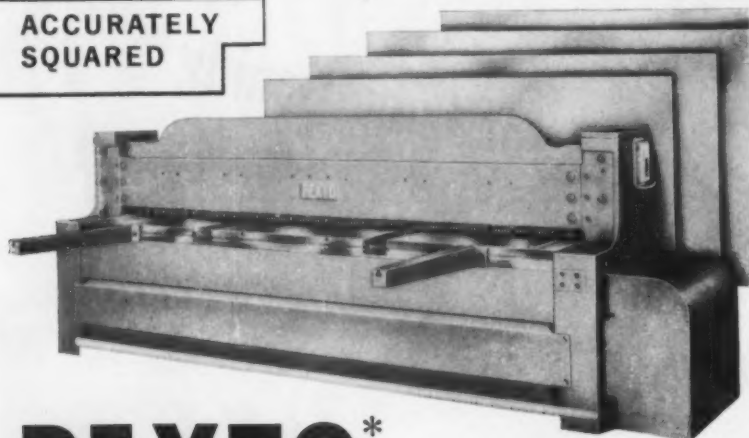
THE C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

Luxaire

HEATING & AIR CONDITIONING UNITS

**Continuous Full Rated Capacity
means BIGGER dollar for dollar VALUE!**

**ACCURATELY
SQUARED**



PEXTO*

*Registered Trademark

**10-U-10
A complete line**

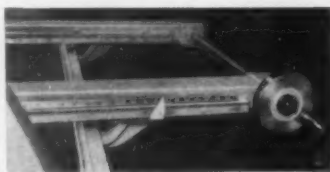
PEXTO Power Squaring Shears have design features that provide unparalleled full capacity shearing with squaring accuracy, delivering top production all day, every day... even at full-rated capacity.

These world famous Squaring Shears are built from heavy, high-grade machine tool castings, and have self-compensating holddowns, precision gauging with maximum cutting-life from four edged blades.

These are but a few of the important features PEXTO Power Squaring Shears offer. Write for the latest literature.

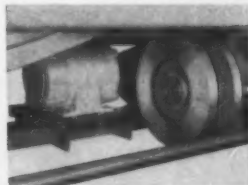
STANDARD BACK GAUGE

NEW improved design. PEXTO has added a new measure of precision, with fast, self-reading dial setting. Gauge can be locked in any position. Graduated in 128ths of an inch.



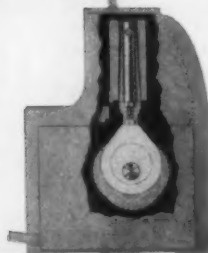
GEAR TRAIN

Double reduction gearing through modern 20° pressure angle steel pinions and cast gears provides smooth power transmission.



DRIVE

Higher flywheel speed and Timken bearings add accuracy and smoothness. Motor base can be adjusted in seconds.



CROSSHEAD SUSPENSION

A unique method of mounting means efficient use of power and effective reduction of side-thrust and wear.

Pexto Squaring Shears are sold through Dealers and Distributors... Send for Bulletins 57 and 60.

THE PECK, STOW & WILCOX CO. Southington, Conn., U.S.A.

A complete line of machines and tools for Sheet Metal Fabrication Since 1785

**equipment
developments**
(Continued)

**Thermostat Styling
Meets Decor Needs**

"SUBTLE TOUCH" TEMPERATURE control line is designed to meet the need for a room thermostat which harmonizes with any decor. Mercury switch mechanisms are housed in sculptured, clean-cut coverings, and the control is contained in a thin, wall hugging casing.

The control is offered in three models. For heat control only is the "T-99." The "T-91" is a single-dial summer-winter air conditioning thermostat, and the "T-344" is a master control center featuring automatic switchover heating and cooling controls—General Controls Co., 801 Allen Ave., Glendale 1, Calif.

**Panel Type Air Filter
Has Self-sealing Edge**

"ULOK" PANEL TYPE AIR filters are made of strong fiber with a rough surface and a highly irregular cross-section designed to stop and hold large quantities of dust. The filters are constructed of Dynel modacrylic, a product developed by the manufacturer.

A self-sealing edge prevents bypass of unfiltered air around the frames through use of a ring support which permits the filter to seal itself in the holding frame. The filter media extends beyond the edge of this ring to insure a compression fit. Filters are free of oils and adhesives, thus avoiding any carry-over into the air stream.

Face supports are eliminated so that dirt particles may be trapped by the entire face and depth of the filter. Also, the batt construction permits depth loading.

The filters can be installed in any existing system. They can be used in typical arrangements of flat bank, "V" bank, and slide-in. They operate at face velocity up to

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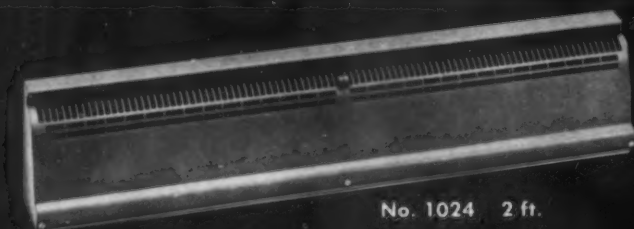


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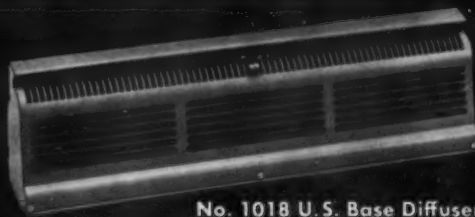


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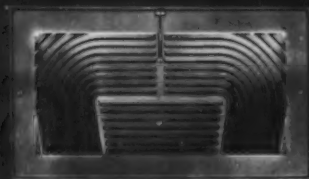
Recently improved, by adding additional oblong openings, U.S. No. 1000 Diffusers now lead the field in free area, beauty, and power. Base, for the Finer Perimeter Systems.



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When you're on a project where Capacity, Compactness, and Diffusion with economy are more important than the Distribution of Air Flow, the No. 1018 U.S. Base Diffuser will assist in securing the Contract. It's only 18" long.

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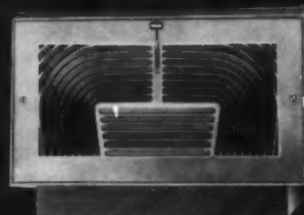


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LOCK—THREE SIZES

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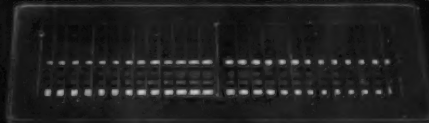
U.S. Pat. No. 176, 926—COM-
PLETE WITH HEAD (Single
Valve) WITH SET-LOCK



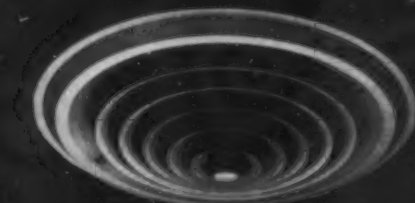
TWO NEW LINES of U.S.—Heavy-Duty, and STAMPED FLOOR DIFFUSER For Projects



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LINE — The Very BEST of ALL Floor Diffusers.

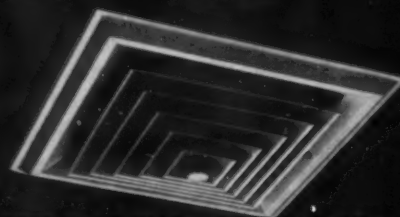


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FACE — The BEST PROJECT ECONOMY LINE — The
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No. 1500 U.S. ROUND CEILING DIFFUSER

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QUALITY and PRICE
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UNITED STATES REGISTER COMPANY

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MINNEAPOLIS • KANSAS CITY • ALBANY

equipment developments

(Continued)

350 fpm, and are stocked in 2 in. and 1 in. thicknesses, available in nine sizes—*Union Carbide Development Co., 270 Park Ave., New York 17, N. Y.*

16 Gage Shear Cuts at 160 Strokes Per Minute

"Di-ARCO 48" POWER SHEAR for 16 ga mild steel up to 50 in. wide. Shear speed is adjustable to 160 strokes per minute made possible through its use of a self-adjusting electric clutch built into the flywheel and connected directly to the motor by means of a triple V-belt drive.

Micrometer operated ball bearing back gage is graduated in 0.001 in. A side gage is ruled to 1/16 in. and can be angled for special jobs.

Safety for the operator is provided through an automatic hold down bar in front of the shear blade. Construction details include: ball bearings on flywheel and motor; sleeve bearings on eccentric shaft; bronze lined ram slides and hardened and ground guides; roller plate side frames, ram and bed; blade straightener; and closed box section bed—*O'Neil-Irwin Mfg. Co., 501 8th Ave., Lake City, Minn.*

Self-contained Heat Pump Mounts on Wall

WHISPAir, compact, self-contained air-to-air heat pump. Unit has been designed for mounting against the outside wall of a building. Two openings are made in the wall. The top opening is for supply air; the lower, for return air. All units are factory assembled in an embossed aluminum cabinet 25 1/8 in. wide; 72 1/4 in. high and 12 3/4 in. deep. The package comes with two attachment brackets. Net weight 230 lb.

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Now you can satisfy "tough buyers" with just the right model heater for every job. The Reznor line features more types and sizes than any other! Choose from:

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- The new Reznor Venter, an automatic vent exhauster that lets you install Reznor unit heaters almost anywhere.
- Effective, five-way heaters for high ceiling applications, 300,000 to 600,000 Btu.

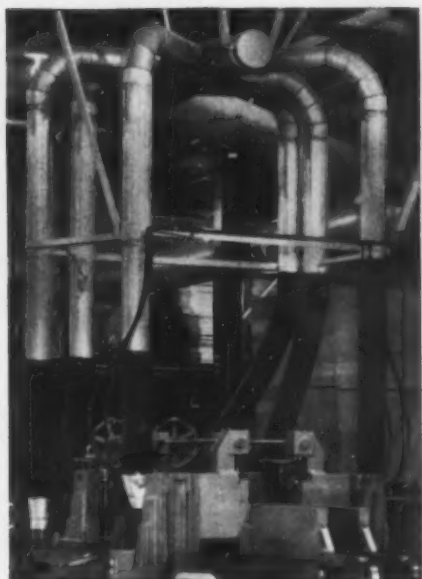
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"WORLD'S LARGEST SELLING DIRECT-FIRED HEATERS"

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Thousands of successful installations prove that use of Flexaust hose and Portovent retractable duct with metal duct systems lower installation costs — but there are other important advantages

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Chicago 2, Ill.

equipment developments

(Continued)

Capacity of the heat pump is 18,000 Btuh on the cooling cycle and 17,000 Btuh on the heating cycle. Control is provided by a thermostat reached through a hinged door in return duct connection. Air distribution is by twin centrifugal blowers rated at 650 cfm. Outside air volume for the condenser is 1420 cfm. Condenser intake is on the front and discharge through grilles located on each side.

A foam rubber gasket is used to seal the unit to the building wall, cutting down on possible noise transmission to the building. Conditioned air is discharged into ducts located in furred down ceilings. Return air ducts can be located under the buildings floor or cased above closet floors. Minimum clearance requirements are 12 in. at sides and 20 in. at bottom. All service work is performed from the outside.

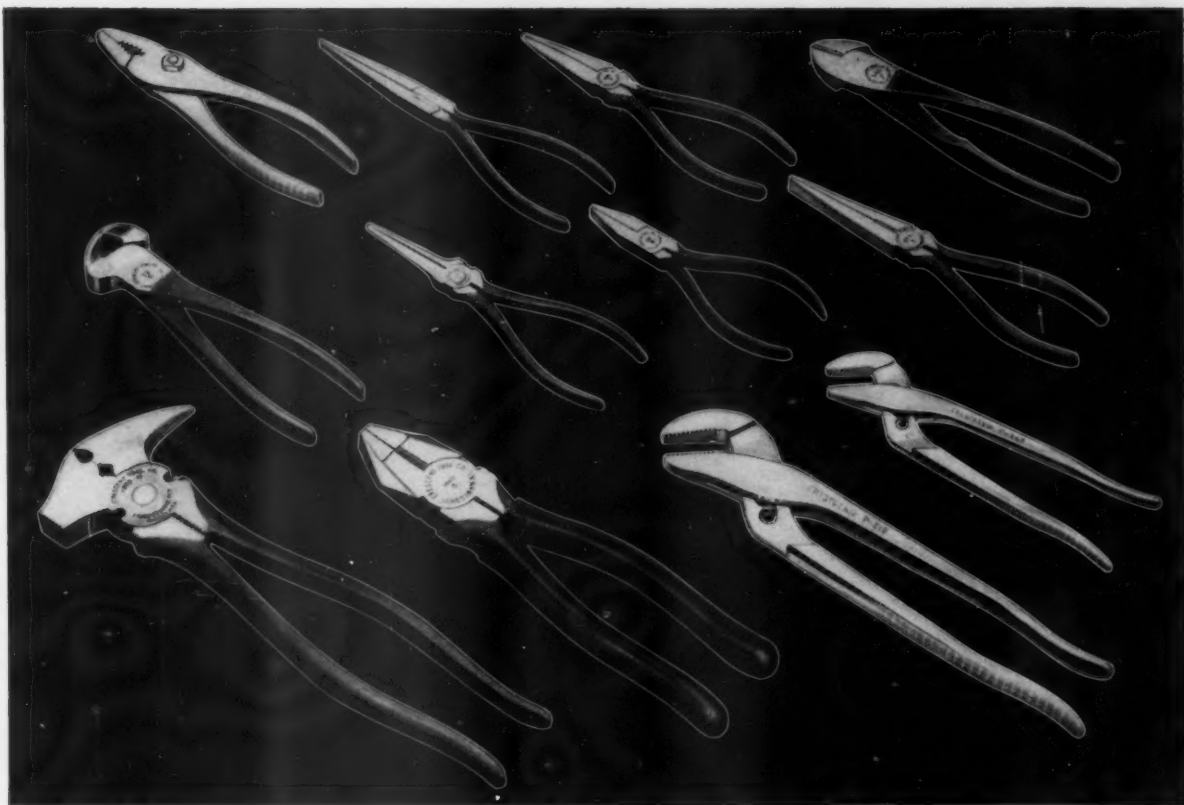
Ranch style, split level and multi-story houses with large floor areas (over 800 sq ft) will use two or more units, thus providing zone control, according to the manufacturer. The heat pump is also suitable for offices, motels, apartments, stores, gas stations, etc.—*Westinghouse Electric Corp., 3 Gateway Center, Pittsburgh, Penn.*

Dealer Nameplates For Jobsite Use

USED FOR NAME ADVERTISING on products sold and serviced by dealers, "Autographs" are now offered in more than 90 die-stamped sizes.

Produced from 0.16 in. alodized aluminum (not a foil) the nameplates are available in a variety of color combinations. A clear, baked lacquer over-coating protects the lithographed copy from abrasion.

"Autographs" features a solvent-activated, adhesive backing.



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CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK

equipment developments (Continued)

They can be mounted quickly, easily and permanently on any clean surface, according to the manufacturer—*Metalcraft, Inc.*, 1619 S. Federal Ave., Mason City, Iowa.

Power Gas Burners Serve Four Markets

A LINE OF GAS burners said to satisfy 90 percent of today's market requirements has residential capacities to 400,000 Btuh input and commercial power burners up to 1,000,000 Btuh. Other models are atmospheric conversion burners up to 275,000 Btuh, and atmospheric inshot burners to 225,000 Btuh.

Conventional in design, these

burners were developed for use by manufacturers of heating equipment as original equipment components and for dealer-contractors as replacement units or in conversion jobs—*Wayne Home Equipment Co., Inc.*, 801 Glasgow Ave., Fort Wayne, Ind.

Signal Indicates Clogged Air Filter

"L-18" FILTER SWITCH with remote indicator signal light is designed to indicate when filter is clogged and should be cleaned or replaced. The control can be used with a separate remote indicator signal light or with the "T-190" room thermostat with a sub-base containing an indicator signal light. All lights operate on 24 volts.

When a clean filter is installed, the control automatically resets itself, turning off the indicator signal light. The system can be

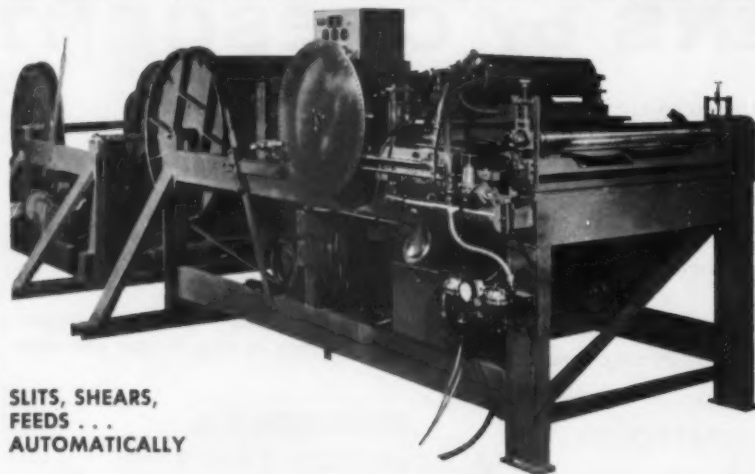
applied to all central heating and air conditioning systems—*General Controls Co.*, 801 Allen Ave., Glendale 1, Calif.

Slip Roll Former, Angle Bender Combined

COMBINATION SLIP ROLL former and angle bending roll does the work of several machines. It is an initial type bending roll in capacities from 20 ga to 7/16 in. thick steel sheet and for widths up to 122 in., with an angle bending roll capacity from 1 x 1 x 1/4 to 2 1/2 x 2 1/2 x 1/4 in.

The rolls of the slip roll former have extended journals with adjustable guide rollers and interchangeable roll heads so that, in addition to angles, tees, channels, flat and round bars can be shaped accurately and quickly—*Hendley & Whittemore Co.*, 100 Blackhawk Blvd., South Beloit, Ill.

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SLITS, SHEARS,
FEEDS ...
AUTOMATICALLY

Imagine blanking out 12,000 elbow blanks per hour. **WELTY-WAY'S NEW SLEAR** does! **WELTY-WAY** feeds metal of any length ... cut to the exact 1/16 inch ... into your fabrication machine. It **supports** metal coil, **evenly feeds** metal, **pulls** metal from coil, **levels** it, **slits** it, **shears** it, **moves** it through the shear and **feeds** it into your fabrication machine. **WELTY-WAY** increases production more than 50% while reducing labor cost!

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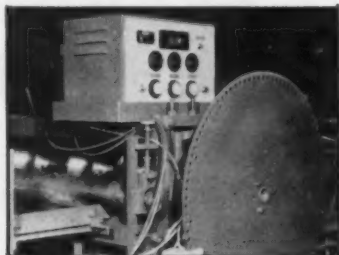
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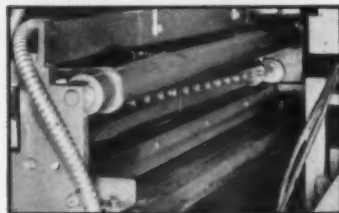
714 1st Avenue N.W.

Cedar Rapids, Iowa

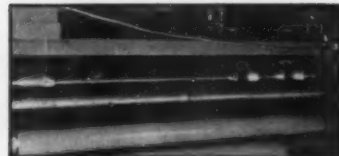
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Slitter slits metal. Unused metal is returned and rewound into a new roll of coiled metal.



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We Americans invented mass production, then we *had* to build mass demand to keep the wheels turning. For this purpose we called upon advertising — the most effective and economical means of creating mass demand. Soon we had more jobs, higher incomes, and better living conditions. And there isn't any limit to how much farther we can go, if we just keep it rolling!

equipment developments

(Continued)

Collar Rolling Machine Adjusts for Beading, Crimping and Slitting

MACHINE FABRICATES "A" collars, stub collars and caps from 26 ga mild steel and non-ferrous metals. Adjustable table gages are included to permit change of setup for a variety of operations. Machine will bead, crimp and slit. Equipment dimensions are 18 x 30 x 15 in. Other specifications include $\frac{3}{4}$ hp single phase motor, weight of 260 lbs—*Fallsington Mfg. Co., Fallsington, Pa.*

Control Center for Electronic Air Cleaning System Is 'Silent Salesman'

CONTROL CENTER for residential electric air cleaning systems (5 x 7 in.) is designed for location in family living area. It tells when the air cleaning cell in the system should be removed and washed (about every three to four months); indicates if the unit is operating properly; shows if the protective screen is clogged; and makes it possible to turn the heating-cooling fan on or off remotely. According to the company, the panel also acts as a post salesman by calling

the attention of visitors to the system and making clean air a topic of conversation.—*Minneapolis-Honeywell Regulator Co., 2747 Fourth Ave., S., Minneapolis 8.*

Air Conditioners, Furnaces Adjust Three-speed Blowers to Requirements

THE "GOLDEN ERA" remote central air conditioner is available in cooling capacities ranging from 36,000 to 60,000 Btuh. Models with "A" and "H" coil evaporators and evaporator blower sections are included in the line.

The "Adaptomatic" line are 2 to 5 ton heat pump models which can be used with either gas or electric supplements. The split chasis design is featured.

The "FlexHermetic" remote central air conditioner series consists of 12 models, available with either space-saving "H" or reliable "A" coil evaporators. A flexible, armored tubing connects the compressor section to the evaporator coil, reducing the number of installation steps.

The "Fedair" type "F" remote air conditioner series consists of free-standing and recessed floor models and overhead and recessed overhead models. The series consists of 20 models, with cooling capacities from 6750 to 23,500 Btuh, and heating capacities from 16,600 to 54,600 Btuh.



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Compare! Comparison proves that amp for amp and dollar for dollar this is your best deal in a heavy duty a-c welder.

Low first cost teams up with maintenance-free reliability to make the "S" very big on value.

Yet everything needed for top performance is here, including movable coil design, silicon steel cores, class B insulated copper coils, superior cooling, and 80 volts open circuit for instantaneous arc starting. Case is heavy gauge steel under baked enamel lifetime finish with dead front construction.

Complete information on the 300 or 500 ampere Miller "S" a-c welders will be forwarded promptly upon request.

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Listed below are collections of articles which originally appeared in *AMERICAN ARTISAN*. Covering Warm Air Heating — Air Conditioning — Sheet Metal Contracting — Ventilation and Dust Removal, these books contain the job-tested practices of experts in the field. You'll find them indispensable for study...for reference...and for daily use.

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A big book of 37 "how and why" articles on residential air conditioning by S. W. Reid, one of the country's most respected experts on home cooling. It's a book that can save you (and your installation and service men) untold hours of time and hundreds of dollars in money on air conditioning installation and trouble shooting. Covers such subjects as . . . how to plan and install air conditioning systems for greatest efficiency . . . why air conditioning systems break down . . . where to look for failures in a system . . . how to fix such failures fast. A wealth of data for all engaged in comfort air conditioning. 132 pages. 8½ by 11. Price \$1.50

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This series of 17 articles by S. Konzo provides correct standards for evaluating the comfort performance of any forced warm air heating installation . . . also for improving efficiency of a newly installed system . . . or for correcting faulty adjustments in existing systems. It tells exactly what factors make a quality system. It gives standards for rating every phase of heating performance. It warns you of trouble spots, tips you off on what to look for (and what to do) when things go wrong. 88 pages. 8½ by 11. Price \$1.50

Ductwork Estimating Tables-Revised

A collection of revised, field-checked figures to help you estimate costs of duct sections, fittings, and components. These up-to-date Ductwork Estimating Tables cover weights and required fabricating times of components in sizes from 44 x 12" to 4 x 7" and fittings needed for elbows, transitions, branches and boot takeoffs. Figures are based on actual stop watch data collected exclusively for *AMERICAN ARTISAN* by E. B. Root and Darwin A. Downing. 25 tables. 8½ by 11. Price \$1.50

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Contains all basic design and engineering data necessary for the proper planning and installation of fume removal, dust collecting, wood-waste removal, ventilating and other industrial sheet metal systems and equipment. Made up in the main of data published in *AMERICAN ARTISAN*, this book offers sheet metal contractors dozens of practical designing ideas, layouts, installation kinks, tables and charts, contributed by more than 50 of the country's leading industrial sheet metal experts. 218 pages. 8½ by 11. Price \$1.50

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BOX 267

NEW ALBANY, IND.

equipment developments (Continued)

The "Trophy" gas furnace line includes 11 models ranging in capacities from 75,000 to 150,000 Btuh. Seven models are combination heating-cooling systems, four are straight heating units.

"FlexAire" gas furnace, 56x18x28 in., features a three speed blower motor that automatically adjusts to heating or cooling air volume requirements. The series is available in 75,000 and 100,000 Btuh sizes.

The "Trophy" oil furnace line includes nine models, with capacities ranging from 112,000 to 168,000 Btuh—*Fedders Corp.*, 58-01 Grand Ave., Maspeth, N. Y.

Radio Transceiver Provides Personnel Communication Line

ALL TRANSISTOR TRANSCEIVER for radio communications between office and personnel working in the field. Model 300 is said by manufacturer to operate at 10 percent of the power required for earlier units, and that no appreciable battery drain is shown if the set is left on overnight.

The all metal die-cast case measures 7 x 6 x 2 in. and is held in place by a mounting bracket designed to provide snap-action release. A 3 ft microphone cord comes with the transceiver—*Osborne Electronic Sales Corp.*, 13105 S. Crenshaw Blvd., Hawthorne, Calif.

Roof Ventilator Serves Both As Supply and Exhaust Air Unit

"TWINALATOR," A SINGLE impeller, package type unit ventilator provides both supply and exhaust air handling in one compact unit. Only one roof opening is necessary, one motor, one drive, and one starter are involved.

The heart of the unit is a single fan of cast aluminum. The outer annular portion of the fan circulates the air in the opposite direction to that circulated by the inner fan blades.

Other features include: weather protected construction throughout; shaft and prelubricated sealed ball bearing shrouded from air stream; externally located motor and adjustable drive pulley, protected by a removable, easily accessible vented enclosure; bird screens on both inner and outer channels; electrical wire tube from motor enclosure through curb plate. The inner and outer cylinders, motor enclosure, and curb plate are aluminum painted, galvanized steel. All working parts are readily accessible from roof.

Air supply which is delivered by the unit can be directed by adjustable louvers at the inside discharge

equipment developments *(Continued)*

parts or attached to ducts for specific areas. Supplied air is discharged horizontally from parts and exhausted air is taken into the ventilator through a center bottom opening.

Accessories which can be provided are: diffuser for directing supply air or for duct connections; tempering coil cartridges for attachment to diffuser; motor disconnect switch; cylindrical supply air filter accessible from roof. The ventilator is applicable for gas and fumes temperatures up to 200 F—*Clarage Fan Co., One Clarage Pl., Kalamazoo 16, Mich.*

Oil-Fired Furnace Uses Flame Detector Primary Control

COMPACT OIL FIRED lowboy furnace, model L-OB, is shipped from the factory fully assembled with primary fan and limit controls, and burner.

Standing 40 $\frac{3}{4}$ in. high, 54 $\frac{7}{8}$ in. deep, and ranging in width from 20 to 27 in., the furnace comes with either belt or direct drive blower and in capacities of 84,000 95,000 112,000 and 140,000 Btuh. A compact, sectional heat exchanger features low draft loss, according to the manufacturer.

The primary control is a burner-mounted, heat-sensing device; unaffected by soot, vibration, corrosion or drafts; responds directly to heat of the flame for fast action and uses a hermetically sealed flame detector.

Other features include easy access panels to the controls, burner, blower and filter. Furnace is mounted on adjustable steel legs—*American-Standard Air Conditioning Div., 40 West 40th St., New York, N. Y.*

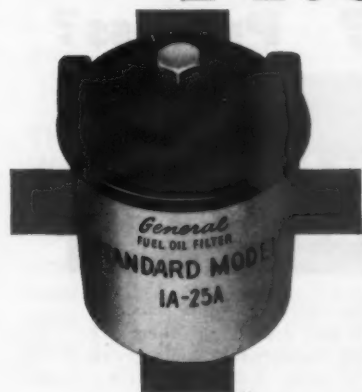
Top Discharge Chimney Housing Replaces Side Vented Models

AIR-JET PACKAGED CHIMNEY, Model "K" series, is designed to allow smoke to rise through vents in the top, rather than be expelled around the sides of the top. The chimney is said by the manufacturer to be entirely soot-proof.

A knock-down housing is provided to make on-the-job assembly easy. The company feels that its seamless, stamped flashing and new installation methods will reduce installation costs.

Model "K" is offered in red or buff "Brick Beauty" finish, red "Contemporary" finish, and grey "Standard" finish—*General Products Co., Inc., P.O. Box 887, Fredericksburg, Va.*

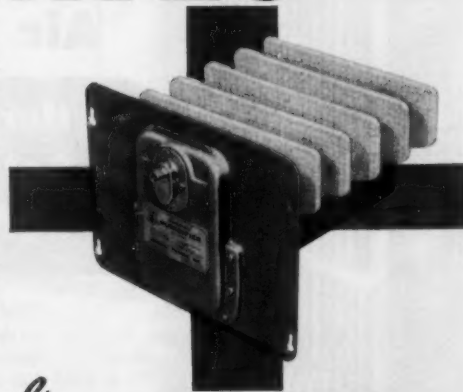
Every day more dealers ACCLAIM General's PROFIT-MATES



General FUEL OIL FILTERS

Efficiently designed so that two sizes fit all home plants. Replaceable wool felt cartridges (*the finest*) trap all moisture and prevent any clogging. Special seal, Buna gaskets, and plastic finish resist most acids, oils, and corrosion. Cast iron and steel construction for long life. Your best choice for dependability!

Jobbers from coast-to-coast report constant dealer commendation of General's PROFIT-MATES—Fuel Oil Filters and Moisture-Matic Humidifiers. Easy to install with only a slight chance of call backs for adjustments, they are both sure-fire profit-makers. If you aren't acquainted with General's PROFIT-MATES order a half-dozen pack of each from your jobber and learn how they earn ADDED profits on any service call.



General Moisture-Matic HUMIDIFIERS

New simplicity and compactness with fool-proof operation make the General the ideal Humidifier for any hot-air plant. Chrome-plated valve, life-time neoprene diaphragm (*no float!*), and corrosion-proof pan makes the General your safest installation for continued customer satisfaction.



Ask Your Jobber for General's PROFIT-MATES
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IN CANADA
Canadian General Filters, Ltd.
39 Crockford Blvd.
Scarborough, Ont.

new literature . . .

Details Advantages of Schoolroom Heating and Ventilating Systems

MANUAL DESCRIBES ADVANTAGES of individual schoolroom heating and ventilating systems and details installation procedures. Written in non-technical language, booklet was prepared for distribution by heating dealer-contractors and others to school administrative officials, school board members or other individuals who may be influential in the selection of schoolroom heating and ventilating equipment—*Norman Products Co., Div. of John J. Nesbitt, Inc., 1160 Chesapeake Ave., Columbus 12.*

How Proper Tooling Extends Use of Press Brakes

"PRESS BRAKE DIES and Their Forming Uses" (134 pages) covers the design and applications of bending and forming dies and punching units for press brakes. Prepared to assist press brake users to visualize methods of operation best suited to their individual bending and forming needs, the book groups dies of related types, punching attachments, and adapters into sections for convenient reference. A numerical

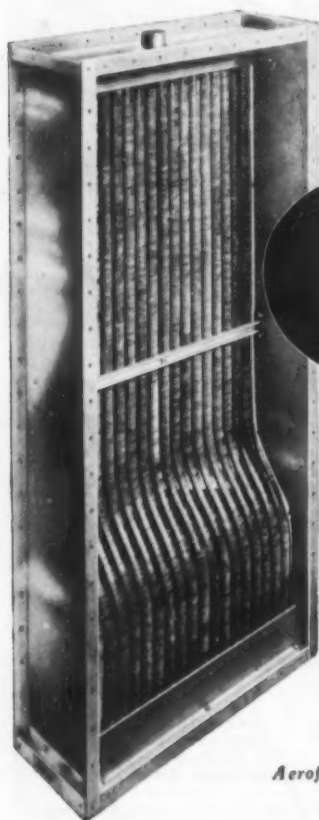
index of all die illustrations facilitates location of proper type dies for any particular job. Included are photographs illustrating the company's tooling service and a discussion on "Principles of Forming and Bending on a Press Brake." Copies are available to any press brake user who sends his request on a company letterhead. Others may secure the book at a cost of \$3—*Dreis & Krump Mfg. Co., 7400 S. Loomis Blvd., Chicago 36.*

Train Your Employees To Be Safety Wise

SAFETY MATERIALS including posters, booklets, banners and films are described in Form 64M-1260-43. Posters available are illustrated in full color. Employee training booklets are described in detail. Samples may be obtained without charge—*National Safety Council, 425 N. Michigan Ave., Chicago 11.*

Demountable Shells Have Replaceable Driers, Filters and Strainers

FOUR-PAGE BULLETIN D6 illustrates and describes flanged demountable shells with replaceable, interchangeable filter-drier, filter and strainer cartridges for permanent liquid line service in air conditioning systems. Shells are of all-brass construction, are



Heating? Cooling? Air Conditioning? Process?

**Here's How to
Get the RIGHT Answer to your
HEAT-EXCHANGE PROBLEMS**

The right ratio of surfaces—the right materials—the right velocities—the right proportion between coil area and depth . . . there are dozens of factors that affect the efficiency, maintenance and service life of heat-exchange coils.

For best performance in your own application, the practical approach is to take full advantage of the unequalled engineering, research and design skill—the unequalled manufacturing and testing facilities—which Aerofin offers you.

To get the *right* answer—ask the Aerofin man.

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N. Y.

Aerofin is sold only by manufacturers of nationally advertised fan system apparatus. List on request.

designed for easy servicing without breaking the line. Selection information is included—*The McIntire Co., Okner Parkway, P. O. Box 5, Livingston, N.J.*

Presents New Developments in Registers and Diffusers

REGISTER AND DIFFUSER CATALOG (44 pages) features descriptions of eight new models including "Thrifty" baseboard and floor diffusers; multi-valve heating-cooling registers; knob operated ceiling diffusers; and high velocity, curved louver, horizontal grilles. An engineering section includes information on the design of perimeter systems and explains how to properly size and locate registers, grilles and diffusers. Ask for catalog LRC-60—*Lima Register Co., 1790 N. Cable Rd., Lima, O.*

Explains Operation, Lists Advantages of Heat Pumps

LITERATURE explains what a heat pump is, describes its advantages and limitations, and presents a description of its heating and cooling operation. Included are tables showing annual degree days for different sections of the country, charts showing coefficient of performance, and diagrams illustrating refrigerant flow and heating control circuit.

Also available is a four page circular illustrating and describing "Champion" air conditioning units for use with existing heating systems—*York Div. of Borg-Warner Corp., York, Pa.*

Charts and Photographs Illustrate Welding of HY-80 Steel

"ALL POSITION WELDING of HY-80 Steel with the Gas-Shielded Process" is a reprint of a paper originally presented at a recent convention of the American Welding Society. The article is illustrated throughout with charts and photographs. Specify ADR 130—*Air Reduction Sales Co., Div. Air Reduction Co., Inc., 150 E. 42nd St., New York 17.*

Jack May Be Used to Help Install Air Conditioners, Unit Heaters

HIGH CAPACITY JACK MECHANISM with non-slip safety feature is described in a two-page data sheet illustrated with product and application photos. According to the company, the jack free standing lifts 500 lb to 10 ft, with ceiling or wall stabilizer lifts 500 lb to 15 ft. Two jacks may be used with 1¼ or 3 in. standard pipe platform extensions for

ZONE-A-TROL

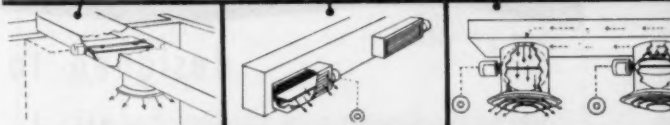
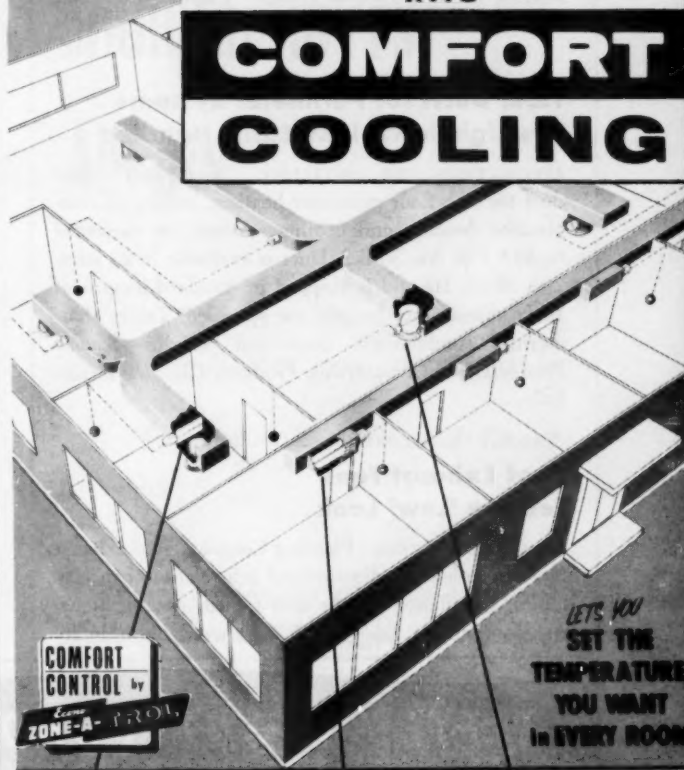
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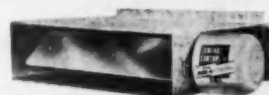
INTO

COMFORT

COOLING

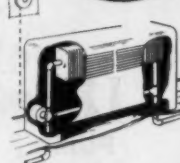


ZONE-A-TROL DAMPER ACTUATORS Automatically Control The Flow Of Air to Each Room



Now Zone-A-Trol lets you install cooling and heating systems that... **GUARANTEE COMPLETE COMFORT IN EVERY ROOM at EVERY HOUR of the DAY or NIGHT.**

Providing the easy, inexpensive answer to installing Individual Room Temperature Control on any new or existing residential or commercial heating or cooling system;... Low Voltage... Thermostat Operated... Zone-A-Trol Damper Actuators... automatically control the flow of air to each room or zone, thereby making it possible to shift the full cooling load from one room or zone to another to compensate for such factors as the afternoon sun, shifting crowds of people, etc.



On Balanced Pressure Hydronic Heating - Cooling Systems Zone-A-Trol By-Pass Valves control the flow of water to each fan coil unit.

SEND TODAY FOR COMPLETE INFORMATION

ECONO PRODUCTS COMPANY, INC.

Division of Viking Instruments, Inc. East Haddam, Connecticut



A Complete Line of Zone Controls



For Every Heating and Cooling System



heavier loads. Uses include installation of unit heaters or air conditioners in such locations as ceiling, attic or roof—*Vermette Machine Co., Inc.*, No. 7 143rd St., Hammond, Ind.

Fiber Ducts for Perimeter Systems Are Light in Weight, Easily Handled

INSTRUCTIONS FOR INSTALLING "Sonairduct" fiber duct for slab floor perimeter heating, cooling or combination heating and cooling systems are presented in AIA File No. 30-B-2. Duct is available in 23 sizes, 2 to 36 in. ID and is shipped in standard lengths of 18 ft unless other lengths are specified. Tables show thermal conductivity, sizes and weights—*Sonoco Products Co., Construction Products Div., Hartsville, S.C.*

Roof Exhaust Fans Feature 'Low' Look

BROCHURE describes "Pleasing Contour" roof exhaust fans. Included are dimensional information, capacity tables, installation photos and typical specifications. Ask for bulletin No. PC-101. Also available is bulle-

tin No. SS-101 describing Type SS low velocity, high capacity roof exhaust fans—*Davidson Fan Co., Dept. 5, 213 California St., Newton 58, Mass.*

Silencers for Ducts Help Cut Down Noise in Air Moving Systems

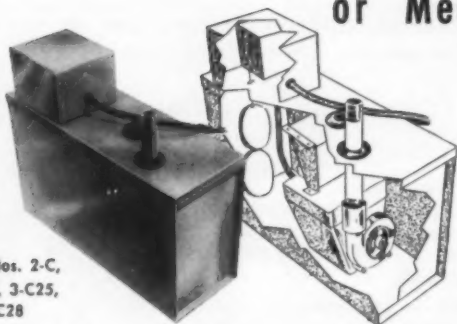
CATALOG describes features of "Quiet-Duct" silencers. In addition to showing acoustic performance, tables list performance of over 44 unit sizes and 90 multiple unit sizes by airflow (from 185 to 372,000 cfm) and by pressure drop (from 0.1 to 1.50 in.)—*Air Conditioning Dept., Industrial Acoustics Co., Inc., 341 Jackson Ave., New York 54.*

Gas and Oil Furnaces Feature Economical Operation

TWO-PAGE DATA SHEETS, punched for catalog insertion, contain information on gas- and oil-fired furnaces including highboy, lowboy, counterflow and horizontal forced air units as well as two gravity models. According to the company, units deliver maximum heat, operate economically and quietly, are styled to blend with any decor. Illustrations include product photographs as well as cutaway views showing components. Specifications are included—*Bonair Div., Peerless Products Co., 23 St. & Sedgley Ave., Philadelphia 32.*

LITTLE GIANT CONDENSATE UNITS...

designed to fit any Air-Conditioning
or Mechanical Refrigeration Unit!



Cat. Nos. 2-C,
3-C20, 3-C25,
4-C28

Small and compact, this little Giant condensate unit is the most economical on the market. Superior design and quality make it the one most preferred by air-conditioning manufacturers and distributors. Solve your condensate problems by installing a Little Giant Condensate unit.

Write for information about our shallow pan condensate units, designed especially for installations where minimum height is important.



New Home of Little Giant Pump Co. • Triple Production Capacity To Meet Increasing Demand

we hear that...

► A NEW GAS FURNACE that drives its own blower with power from a thermoelectric generator is under development by the C. A. Olsen Mfg. Co. Ronald N. Campbell, president, said the thermoelectric generator is rated at 130 watts and converts the heat of burning gas directly into electricity.

"This application of thermoelectricity to a gas-fired, forced air furnace brings a number of improvements to the conventional home heating unit," Mr. Campbell explained. "First, the reliability of the unit is greatly increased because it doesn't depend upon an external electric power source. Installation costs are lowered since no electrical connections are required. In addition, the built-in power source provides savings in the monthly electricity bill."

Mr. Campbell pointed out that company engineers have been working on the new furnace for more than two years, and the project has now entered the final phase of development. The objective is to produce a central heating, forced air furnace with its own source of power using a commercially available blower, and complying in every respect with standards set by the American Gas Association.

The new furnace was publicly demonstrated for the first time at the International Heating and Air Conditioning Exposition held recently in Chicago.

► THE FERDINAND DIECKMANN Co., manufacturer of conductor elbows and shoes since 1872, recently moved from the site it has occupied for approximately 80 years to new and larger quarters located at 2351 Ferguson Rd., Cincinnati 38. The new facilities, comprising about 45,000 sq ft of floor space, provide additional room needed to meet growing manufacturing, warehousing and office requirements.

► AIR CONTROL PRODUCTS, INC., has completed a new plant in Coopersville, Mich., which increases the company's manufacturing capacity by one third.

► DOWNSTREAM INSTALLATION of Reznor Mfg. Co.'s "DS" series modular duct furnaces in year 'round packaged air conditioning systems has been approved by the American Gas Association. Such AGA approval requires: 1) Use of corrosion resistant materials in heat exchangers, carryover parts and pilots; 2) Provision for proper elimination of condensate. According to the company, downstream installation of duct furnaces benefits both installer and user because of easier maintenance and comparative simplicity of installation.

► PREMIER FURNACE Co., Dowagiac, Mich., has merged with Consolidated Industries Corp. of

Manufacturers

Agents

*Are you interested in
securing additional lines?*

We are occasionally asked by our manufacturer advertisers to suggest the names of manufacturers' agents in various sections of the country whom they can contact in regard to representation of their residential and small building heating, air conditioning and sheet metal products.

If you would like your name listed on our records for inquiries we may receive on your territory, we invite you to write us. There is no charge in connection with this service.

American Artisan

6 NORTH MICHIGAN AVENUE
CHICAGO 2 ILLINOIS

EARN EXTRA PROFIT NO OVERHEAD INCREASE

There's money just waiting for you in the bird repellent business. Let Nixalite show you how you can earn extra profit with no investment. There's no magic to it because you **already** have the equipment needed to install this permanent bird barrier. This business can fit into your pattern beautifully because you already have skilled men working for you, too.

Many sheet metal plants already have taken advantage of this profit maker by adding a bird repellent division.

Our national advertising furnishes you with leads and the birds themselves point out your best prospects.

Write for our booklet today and a free sample.



Nixalite

COMPANY OF AMERICA
Department 143
1722 First Avenue
Rock Island, Illinois

FLANGES THE DUCT with Amazing Speed!

Less than 5 seconds on short
and lighter pieces . . .
Slightly longer on bulkier pieces

MAKES PERFECT DRIVE-CLEATS TOO!

The **ONLY** tool that does both.
A complete drive cleating tool . . .
no set-up time . . . no adjustments.
Handy to take out to the job when
not needed in the shop. Turns idle
time into production time. Flanges
any square duct up to 20 gauge.
Quickly pays for itself in time,
material and labor savings.

- No. 12 Smith's Cleat Bender
12" Wide —
- No. 18 Smith's Cleat Bender
18" Wide —
- No. 24 Smith's Cleat Bender
24" Wide —
- No. 30 Smith's Cleat Bender
30" Wide —

Also Universal Cleat Bend-
ing Brakes and Box and
Pan Brakes

Write for nearest
distributor



**PERFECT
DRIVE CLEATS**
fit the duct without
the use of a screwdriver.
TREMENDOUS SAVINGS
in erection time and labor.

R. E. SMITH MANUFACTURING CO.
124 ELIZABETH STREET WAUKEGAN, ILLINOIS

we hear that

(Continued)

Lafayette, Ind., and will be operated as a division of the Consolidated firm. Dowagiac operation will include the general sales office for the Premier division, warehouse, shipping and some manufacturing. Bernie Lagerborg, associated with Premier for 26 years, will direct the division as vice president of sales.

► **JOSEPH T. RYERSON & SON INC.**, has added Reynolds Aluminum to its steel service center stocks at Cincinnati. Named manager of aluminum sales at Cincinnati is Frederick B. Winther Jr., who continues as manager of the steel sheet and strip sales department which he has headed since 1957.

► **JANITROL HEATING AND AIR CONDITIONING DIV.**, Midland-Ross Corp. recently began a series of heating and summer air conditioning schools at its plant in Columbus. Dealer-contractors work on "live" operating equipment, including newly-designed air-cooled summer conditioning units and gas- and oil-fired heating equipment. Courses cover operation of electrical and mechanical controls as well as purging and charging of air cooled systems. To explain troubleshooting techniques, instructors make use of equipment which has been deliberately made to function improperly.

Four week-long schools have already been held. Others are scheduled to begin March 20; April 3, 10, 17 and 24; and May 1, 8 and 15. Heating and cooling schools are alternated so that those attending can cover the complete 1961 course in a two-week period.

► **ROBERT J. BERKSHIRE** has been appointed vice president, marketing — a newly-created position — of American-Standard's Air Conditioning Div. Mr. Berkshire was formerly general marketing manager. In his new position, he will be in charge of the division's sales and marketing activities including product development, advertising and sales promotion, marketing research, and distributor-dealer training programs. Mr. Berkshire has been with the division since its formation in 1953.

► **FORTUNE ADVERTISING AGENCY** has been formed to provide advertising, marketing and promotion services to members of the heating and air conditioning industry. The new operation — located at 1514 Prospect Ave., Cleveland — is a partnership with Dick Gang and Jack Green (both former sales managers of Viking Air Products) and John Thibo (also formerly associated with Viking Air Products) as the principals. In announcing the formation of the new company, Mr. Gang said: "We believe a planned 12-month-a-year advertising program de-

we hear that

(Continued)

signed to sell merchandise is an absolute necessity if a business is to grow profitably. In a close-margin industry, all dollars must be invested to help increase sales, and our thinking and agency philosophy is based on creating programs designed to consistently build sales."

► A PROGRAM designed to increase sales of central air conditioning equipment by dealer-contractors was presented at a recent convention of Fedders Corp.'s central division distributors. Over 500 distributor representatives attended the meeting to hear details of the program which offers dealer-contractors: 1) a sales incentive vacation plan; 2) promotional material (illuminated outdoor signs, window displays, wall banners, decals, literature racks, etc.); and 3) an advertising program including a six-month local newspaper campaign, for which the Fedders company will provide free ad mats.

Featured at the meeting was the presentation of solid gold keys to new members of the company's "Key Club." Speakers included Salvatore Giordano, president; U. V. Muscio, executive vice president, C. C. Kirk, central division sales manager; and G. W. Hipple, north Atlantic regional manager.

► HUPP CORP. has realigned its organization structure along group lines to effect closer liaison between the corporate staff and operating divisions, according to Don H. Gearheart, president. To reduce the number of divisions reporting directly to the president, the board of directors recently elected a group vice president — Anthony J. De Fino, Hupp vice president and general manager of the Perfection Div. Mr. De Fino has been with Hupp since 1957.

► PENN CONTROLS, INC. recently held a week-long sales conference for sales personnel from all parts of the United States and Canada. Sessions were devoted to market and product study as well as sales planning for 1961.

► INLAND STEEL CO. has launched a promotional program designed to help builders sell more homes. Display kits, available to builders through sheet metal contractors, contain material pointing out that "Star Spangled Homes" use "Ti-Co" galvanized steel heating and ventilating ducts, gutters, downspouts, etc. Star-shaped tags, for use in model homes, call attention to various products in the home that are made of galvanized steel, explain that "here is another 'Star Spangled' feature offered to home buyers by the builder of this house." Other material includes pennants, handouts, ad mats and a door mat.



HOT DIPPED

THE CINCINNATI ELBOW CO.

4730 MADISON ROAD ■ CINCINNATI 27, OHIO

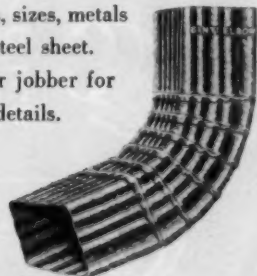
Cincinnati Elbows are hot dipped in zinc after forming, for a smooth, long wearing finish that is completely rust and corrosion resistant, inside and out. Once installed, they give years of faultless service.

Cincinnati Elbows are shaped with tapered ends, guaranteeing accurate fit with any standard size pipe.

All Cincinnati Elbows are precision produced on fully automatic machinery for unvarying, constant uniformity.

Available in all angles, sizes, metals also in galvanized steel sheet.

Ask your jobber for full details.





Armo
DUCTAPE
TRADEMARK
**KEEPS
THE
HOT
AIR
IN**

- ✓ Makes every joint air-tight
- ✓ Ducts deliver more heat
- ✓ Self-adhesive, easy to apply, cuts installation time
- ✓ Sticks to all materials
- ✓ Conforms to all contours
- ✓ Ideal for applying insulation
- ✓ Flame-resistant type also

Ask your jobber for DUCTAPE

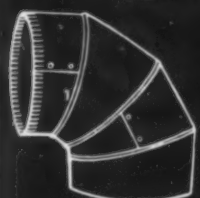
Write for
FREE test
sample



Armo
ADHESIVE TAPES, INC.
Dr. Scholl's Adhesive
Tape Division
**5017 Ohio Street
Michigan City, Ind.**

MANUFACTURERS AGENTS WANTED FOR SOME SELECTED AREAS

We Make A



**FULL
LINE
OF
HANDY
PIPE**



**Send For Names
Of Nearby Jobbers.
F. Meyer & Bro. Co.
Peoria Illinois.**




wholesaler doings...

► **HUNTER'S SUPPLY Co., Inc.**, Indianapolis, will stock the complete line of registers, grilles and diffusers manufactured by Standard Stamping & Perforating Co.

► **FORMAL OPENING** of the Harrisburg offices and warehouse of Paul Thompson & Co., Inc. was recently celebrated with an open house party. The new facility, located at 120 S. 27th St., is under the direction of Thomas P. Halligan. The Thompson company serves Delaware, southern New Jersey and part of Pennsylvania. On display at the open house were York heating and air conditioning products, Mammoth commercial warm air furnaces, and "Economite" and "Lo-Blast" gas burners.

► **ALBERT A. DUCKETT**, for 20 years the southern New Jersey distributor for Carrier Air Conditioning Co., has been assigned the franchise for the Greater Boston area, all of Rhode Island and eastern Massachusetts. His new firm — Duckett Distributing Corp. — has 2000 sq ft of office space at 150 Causeway St., Boston, and a 12,000 sq ft warehouse in Somerville. A showroom, training facilities and a 1000 sq ft service parts depot are included in the Boston headquarters.

► **THE THOMPSON Co.**, 985 Monroe Dr., N. E., Atlanta, Ga., has been named exclusive distributor in Georgia of American Air Filter Co.'s "Electro-Klean" electronic air filter.

► **STEVE JORDAN, INC.**, 1117 N. Santa Fe, Wichita, will handle distribution of Fedders equipment in the Kansas area. Executives are Steve Jordan, president; John Jarara, vice president; George Jarara, secretary-treasurer; and Jack Hennigh, sales manager.

► **NEW WHOLESALER** serving western Kansas is Funderburgh Co., 2706A E. Central, Wichita. The new operation is headed by H. E. Funderburgh, until recently president and manager of Okan Supply, Inc., Wichita. Facilities include a warehouse for local inventory at 800 E. First St. in addition to the Central street office. The company has recently been appointed a distributor of residential and commercial air conditioners, furnaces and other products of the York Div., Borg-Warner Corp.

► **DUNBAR METAL AND SUPPLY Co.**, Spring Hill Sta., Charleston, W. Va., has been named to handle distribution of Perfection heating and air conditioning products in the Charleston-Huntington area. Ed-

ward G. Lippitt Jr., executive vice president of the Dunbar company, heads the sales organization for Perfection products in that area.

► **DON RILEY** has been appointed district sales manager for Ohio Furnace Co. Mr. Riley has been in the heating field for almost 20 years, beginning as a heating salesman for Sears, Roebuck and Co. In his new position, he represents Ohio Furnace Co. in five counties of Ohio, including half the city of Columbus. James White has joined the company as a sales representative. New product service manager for the company is Dan Graves.

► **THE GENERAL HEATING & COOLING CO.**, Kansas City, Mo., will handle distribution of Carrier air conditioning products in northern and eastern Kansas, western Missouri, and a few counties in Arkansas. General Heating's Kansas City headquarters are located at 2101 Broadway. A branch office was recently opened in Salina, Kansas. W. A. Tholen is president of the firm.

► **SID HARVEY SUPPLY, INC.** has acquired 60,000 sq ft of land in Garden City, N. Y., where it will build a new structure scheduled for occupancy in

early spring. Sid Harvey Supply, Inc., presently occupying the same building as Sid Harvey, Inc., in Valley Stream, will move into the new building upon completion.

► **J. A. WALSH & Co.**, 4301 Gulf Freeway, Houston, has been named exclusive distributor for Perfection equipment in the Houston trading area. The Walsh firm is headed by its founder, James A. Walsh. William M. Boland is sales manager of the company's air conditioning division. The company has a branch in Beaumont, Tex., which serves that area and western counties in Louisiana.

► **Flarapco, Inc.**, has been named Florida distributor of "Duo-Therm" heating equipment manufactured by Motor Wheel Corp. The Florida wholesaler maintains headquarters in Miami, has branch offices in Jacksonville and Tampa. L. R. Bickley is general sales manager.

► **THE CONNECTICUT AIR CONDITIONING CO.**, 543 Orange Ave., West Haven, Conn., has had its Carrier franchise expanded to include Franklin, Hampden and Hampshire counties in Massachusetts and New London county in Connecticut. Connecticut Air Conditioning is headed by Stanley S. Bronski, who joined the firm 11 years ago. A. A. Weiss is sales manager.

... finding price competition tough?

ADVANCE THE SALE OUT OF THE "LOW PRICE" CLASS

BY USING **AMERICAN ARTISAN'S** Standards For Rating Heating Systems and Standards For Rating Residential Cooling Systems

Use these proven sales tools to show the prospect how to purchase a heating system, a summer air conditioning system, or a complete year 'round residential air conditioning system and thus avoid the pitfalls of an inadequate system.

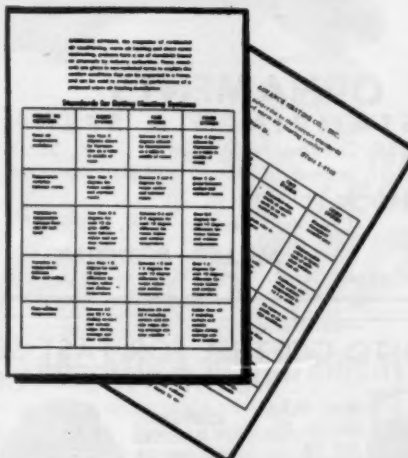
These *Standards* cards list the major points a prospect should consider when buying a heating, cooling or combination system. Words familiar to all prospects are used to explain the buying points and the classification of system performance into "GOOD," "FAIR" or "POOR" categories.

Classifications shown on the *Standards* cards are backed by data obtained from programs conducted in research laboratories and through field investigations.

STANDARDS CARDS MAY BE USED . . .

- by salesmen as sales tools
- as direct mail pieces
- as handouts at homeshowings, fairs, etc.
- as showroom displays

**SEND
THIS
COUPON
NOW!**



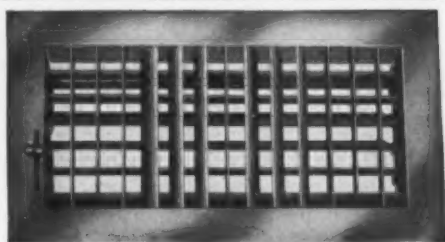
Editors, American Artisan
6 N. Michigan Ave., Chicago 2, Ill.

Send _____ Heating Standards Cards
Send _____ Cooling Standards Cards
at 2 1/4 cents each, cash with order.

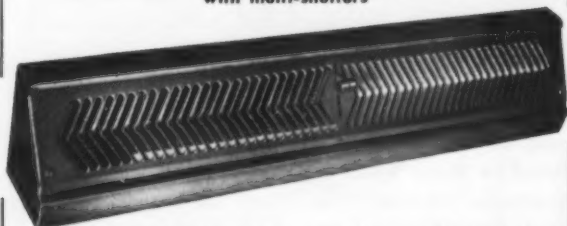
NAME

ADDRESS

CITY STATE



MODEL AV-7—HIGH EFFICIENCY TYPE
For cooling and heating, four-way deflection
with multi-shutters



ARRO-FLO DIFFUSOR AF-20" and AF-30"
HIGH EFFICIENCY BASE-BOARD TYPE OUT-OF-WALL
REGISTER FOR BOTH HEATING AND COOLING PUR-
POSES. Our distinctive Arro-Line styling blends with any sur-
roundings, measuring only 3 3/8" in height, allowing for ideal
installation under windows.

Write for Catalog
National GRILLE AND
REGISTER CO.
10740 Broadway Ave., Cleveland 25, Ohio



ORNAMENTS
STAMPINGS & SPINNINGS
Zinc Ornaments Available From Stock. Copper,
brass, bronze, aluminum and stainless steel ornaments
made up promptly.

If you don't have catalog K, send for it NOW

MILLER & DOING

89 ADAMS STREET

BROOKLYN, N.Y.

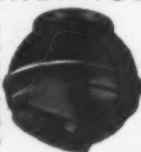
GO TO GOETHEL FOR FAST SERVICE

... WE HAVE WHAT YOU NEED



FULL BLAST
GATES 3"
and up
STOCK

FLANGES &
GASKETS
BLOWPIPE
ELBOWS
DUST
COLLECTORS
& FITTINGS
PVC PLASTIC
HOODS —



PIPE — ELBOWS 3" to 12" STOCK



HALF BLAST
GATES 3"
to 8"
STOCK

Immediate ship-
ment on stock
items. Write for
price list.

BALL JOINTS
3" to 12" STOCK
PIPING 10' LENGTHS, 7"
& LARGER. 16 ga
and LIGHTER



Alfred Goethel Sheet Metal Works, Inc.
3218 W. Fond du Lac Ave. Milwaukee 10, Wis.

merchandising ideas

► AN OUTDOOR ADVERTISING SIGN 28 x 18 ft promot-
ing "Palm Beach" heating comfort is now being used
by National Modulation Co.'s retail outlet in St.
Paul. The familiar palm tree used by the company to
identify "Palm Beach" systems extends above the top
of the sign board for increased realism. The company
plans to make the sign available to dealer-contractors
in various other areas as an effective means of in-
creasing public awareness of the "Palm Beach" sys-
tem and the comfort it offers.

► "SATISFIED CUSTOMERS are the heating and air
conditioning man's most valuable assets," says Wolff,
Kubly and Hirsig, Madison, Wis., warm air heating
and air conditioning dealer-contractor. The company
periodically photographs homes where it has installed
heating systems, and is currently using the photos for
a window display. A banner points out that "Madi-
son's finest homes use our heating systems." Display
cards call attention to the fact that the company
handles both new and modernization work.

► "THE SUPERMARKET SWEEPSTAKES," recently con-
ducted in cooperation with a Houston supermarket,
netted 1500 requests for air conditioning surveys and
estimates, according to General Electric Co.'s Central
Air Conditioning Department. Four-color ads (mats
for which were furnished by GE) publicized the
contest in local newspapers. Other promotional mater-
ial included entry blanks, displays, etc. Participating
dealer-contractors supplied the contest prizes, which
included a central air conditioning system installed
in the winner's home as the grand prize. To enter the
contest, a homeowner was required to complete the
sentence, "I'd like a GE 'Air of Satisfaction' in my
home because . . ." in 25 words or less. Anyone
who requested an air conditioning survey of his
home received an electric alarm clock. Participating
dealer-contractors received the leads acquired in this
manner.

► AN ESTIMATED 2,000,000 PERSONS are expected
to view the Stewart-Warner heating and air condi-
tioning display at the Weir-Cook airport in Indian-
apolis. Included in the display are furnaces, oil burn-
ers, space heaters, condensing units and heat pumps.
Translight photos in front of each unit illustrate
hidden construction features. A convenient telephone
delivers a two-minute taped description of the
"Electro-Flo" furnace and its "Selective Sequencer"
control, which measures out heat to match the heat
loss.

Post cards are available so that interested persons
may request information on products.

appointments . . .

► **WILLIAM A. LAKE** as vice president in charge of marketing for York-Shipley, Inc. Mr. Lake was previously manager of distributor sales for Carrier Corp. In his new position he will be responsible for the planning of merchandising programs promoting residential furnaces, "Jackson & Church" commercial furnaces, and other products.

► **HERMANN C. HOFFMANN** as general sales manager of Carrier Air Conditioning Co. Mr. Hoffmann joined Carrier Corp. in 1937, has served as general sales manager for direct sales for the past seven years. John F. Kooistra, formerly director of marketing services for direct sales, has been appointed manager of direct sales. George T. Long, formerly director of marketing services for distributor sales, has been named manager of distributor sales. John F. Manion was named director of marketing services. He was formerly manager of distributor sales in the southeastern region.

► **HERBERT E. PUTTBACH** as sales manager for Walton Laboratories, Inc.

► **RICHARD A. MATTHEWS** as sales supervisor of heating and air conditioning products for Owens-Corning Fiberglas Corp. Previously Mr. Matthews was a sales representative in the firm's Louisville branch office.

► **JOSEPH E. APPELT** as manager of the Grand Rapids, Mich., sales office of The Trane Co. Mr. Appelt has been with the Grand Rapids office for over 20 years. Richard W. Lehman has been named manager of the Buffalo, N.Y., sales office. He has been a sales engineer in the Buffalo office since 1951. Willard S. Levings, formerly assistant manager of the Boston sales office, has been appointed manager, succeeding Clifton W. Linnell. Mr. Linnell is retiring after managing the Boston office for 22 years.

► **RICHARD J. CONNERS JR.** as regional manager for Insto-Gas Corp.'s central region comprising Ohio, Kentucky, Indiana, West Virginia and western Pennsylvania. He will have headquarters at 6473 Rapid Run Rd., Cincinnati 33.

► **PAUL A. HUNKER** as southern field zone sales manager for Morrison Steel Products, Inc. Mr. Hunker will cover Arkansas, Louisiana, Florida, Mississippi, Tennessee, North and South Carolina, Georgia and Alabama. Edward W. Foehl, named northeastern

(Continued on page 127)

E-Z-ONS

**Cost Less
Offer MORE!**



E-Z-ON "Snap-Tite" Design No. 29



Special tail piece has retractable snap end bearing . . . eliminates need to bend damper or spring duct to insert damper.

You pay less and get more features with speedy E-Z-ON damper regulators, because they're design engineered to do a better job . . . quicker.

Here's Proof: • Lower Price . . . Means Lower Cost to You
• Double Prongs Mean Double-Grip . . . No chance of swiveling
• Washer is Permanently Attached . . . No loose washer to drop or fall in pipe
• Modern "Swept" Wing Nut is Eye-appealing . . . Adds new beauty to installations
• Balanced Construction . . . Prevents possible binding of damper in duct.

M. A. GERETT CORP.

724 W. Winnebago St., Milwaukee 5, Wis. J
all leading jobbers stock E-Z-ON
Stocked in Canada by THERMIDAIRE CORP. 79 Cumberland St. Toronto





NEW
LESLIE

VersaCAP

Cuts Your Stock Requirements $\frac{2}{3}$

- Wide-range adjustable collar (pats. pend.)
- Clog proof • Baffles stop rain and snow
- No down draft • Positive draft action

VERSACAP's exclusive adjustable collar greatly reduces inventories since four models fit pipe diameters from $2\frac{1}{4}$ " thru 8 $\frac{1}{2}$ " inclusive. It's so versatile it can be used for any type of installation. Made of corrosion resistant aluminum and is designed for all fuels—gas, oil, coal, wood.

Write today for the New VERSACAP Catalog Sheet

LESLIE W

ELDING CO., INC.

11243 W. MELROSE ST. • FRANKLIN PARK, ILLINOIS

The A. B. C. Symbol...



The right to purchase or refrain from purchasing this publication gives you, the reader, and no one else the power to pass judgment on whether it shall continue to survive. This symbol represents the standards by which your voluntary response is measured. It testifies to the advertising value of this publication. It also serves as a constant guide to our readers' opinion.

American Artisan

This symbol represents our membership in the Audit Bureau of Circulations, your assurance that our circulation facts are verified by independent audit, measured by recognized standards, and reported in standardized reports. These audited facts, available without obligation to interested persons, provide a factual basis for advertising rates, evidence of subscriber interest, facts on market coverage, and facts for appraising our circulation quality and editorial vitality.

Hallmark of Circulation Value



Who is Responsible for Equipment Performance?

(Continued from page 84)

dence to show that the party sought to be charged has, by his language or conduct, admitted the correctness of the account.

"It is not absolute that the account should be stated or the assent thereto given in writing. It is sufficient if it is so communicated that the minds of the parties can come to an agreement as to the balance due one or the other, and to hold to such agreement."

Customer Held Liable

Following the law laid down in these earlier decisions, the court said that the customer here was liable for the balance remaining unpaid on the contract.

"There is no dispute that following the proposal to install the equipment, a contract was entered into for its installation. Without detailing it, the evidence tending to show fraud was in the dealer-contractor's representation that, in connection with the installation, the equipment would drill a well to obtain water for cooling purposes, that it had drilled other wells, that the temperature of the water to be obtained would be 60 F, and that the well was drilled but the temperature of the water was 68 F.

Basis for the Decision

"The installation of the equipment was completed, and the truth or falsity of the claimed misrepresentation was apparent when the purchaser executed his note in which he explicitly stated he had received and accepted the equipment.

"At a time when the purchaser was aware that the seller had not furnished a well with water of a particular temperature, he executed the note, one of the statements of which was that he waived any claims that he might have against the seller."

appointments

(Continued)

field zone sales manager, will represent the firm in the New England states, New York, New Jersey and Pennsylvania. Walter H. Kelly, as midwestern field zone sales manager, will serve North and South Dakota, Nebraska, Kansas, Oklahoma, Missouri, Iowa, Minnesota, Wisconsin, Michigan, Illinois, Indiana and Kentucky. Arthur J. Seeds has been appointed factory representative in Ohio.

► E. R. PIERCE as general manager, packaged product branches, for the York Div., Borg-Warner Corp. He succeeds Lloyd D. Wasson, who recently retired after 22 years with the division. Ralph W. Phillips, formerly district sales manager with offices in Memphis, has been named to manage the St. Louis packaged products wholesale branch.

► RAYMOND J. JACKLYN as manager of the new West Coast branch of Big Joe Mfg. Co. The new branch, located in San Francisco, serves eleven western states.

► N. F. MOODY as regional sales manager for Air Reduction Sales Co.'s eastern region. In his new position, he will be responsible for the sale and distribution of all products marketed in the eastern region, will supervise district offices in New Jersey, Massachusetts, New York, Pennsylvania and Ohio. He succeeds A. S. Blodget, who is now vice president, midwestern region. Mr. Moody has been with the company since 1946.

► AIR CONDITIONING WHOLESALERS, INC., Rochester, N. Y., as distributors in western New York State for Typhoon Air Conditioning Div., Hupp Corp.

Obituary

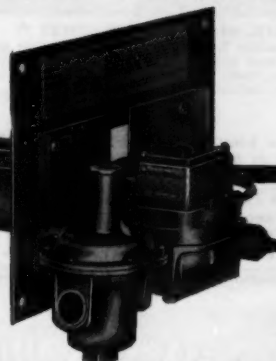
James L. Coker III

JAMES L. COKER III, president of Sonoco Products Co., died February 16, 1961 in Presbyterian Hospital, New York. He was 56 years old.

Mr. Coker began work with Sonoco in 1928 as assistant treasurer, becoming president on the death of his father in 1931. During the 30 years of his management, the company increased many times, extending its branches into various sections of the United States as well as Canada, Australia and India.

Surviving are his widow, a son and a daughter.

MAKE SURE YOU HAVE A BANNER YEAR IN VOLUME AND PROFITS



SELL AND INSTALL THE UNSURPASSED OG-56 OIL-TO-GAS CONVERSION UNIT by BANNER BURNER

- Flawless Design and Construction.
- No-Burn-Out, One-Piece Cast Iron Venturi and Flame Spreader.
- Fast, Easy Installation... Fits through Four-Inch Oil Burner Sleeve.
- M. H. Controls, Available in Powerpile or 24-Volt System.
- 60,000 to 150,000 BTU Input.

Write for complete details

BANNER BURNER CO.
277 EAST INDIANOLA AVENUE YOUNGSTOWN 7, OHIO

BEVERLY POWER

EFFICIENT
EASY TO USE

Slitting Shear

Designed to Provide:

- Fast, Clean Accurate Slitting
- Quick, Easy Set-up to Desired Cutting Widths
- Enclosed Direct-Drive for Safe, Sure Cutting



3 Sizes
Capacity of
10, 14 and 20
ga. in mild steel

The extra-rigid, easily adjusted Back Gauge of the Beverly Power Slitter provides a positive stop and a solid base for the sheet as it moves through the machine. The Gauge can be quickly removed to leave the shear's deep throat open for free-hand slitting if desired. Spring-loaded Sheet Retaining Roller and channeled Back Gauge Slide Bar keep sheets in proper alignment for straight, accurate cutting.

Easy-to-read etched scales on either side of machine permit direct reading and quick setting to cutting width. Two reversible, interchangeable chrome cutters are direct-driven through steel shafts to assure safe, positive operation.

See your nearby Beverly Distributor
Write for catalog sheet and complete details

BEVERLY SHEAR-MANUFACTURING CO.

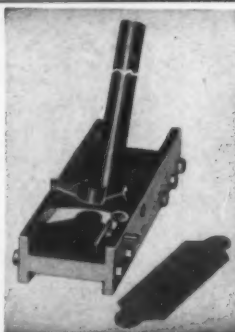
1120 W. 11th Street • Chicago 55, Illinois



SWIVEL HEAD SQUEEZER TONGS ▲
For closing Government box lock connection on duct work and all standing seams. Swivel head makes tongs usable on all four sides, in either vertical or horizontal position.

for a complete
line of **SHEET
METAL MACHINES
AND TOOLS**

DRIVE CLEAT NOTCHER ▶
Handles up to 3" wide, 20 ga. or lighter. Hand operated. Mounts on bench, or on job with clamps, or bolts and screws.



REINER & CAMPBELL CO., INC. P.O. Box 5035
Newark 5, N.J.

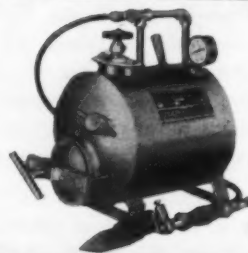
**CLIP
PUNCH** ▶

For fastening slips or seams on ducts. Will push a "half moon" thru 3 thicknesses of 18-ga. steel. No hammering or flattening out to fasten slip to the duct.



**SOLDERING
OUTFIT** ▶

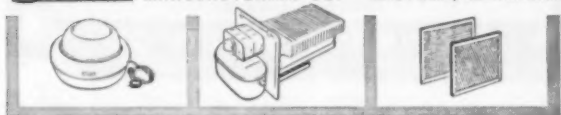
Will give you hot soldering iron in one minute—Solders eight hours for 10c—Right amount of heat—No changing of irons—Make your own fuel from water and carbide.



Skuttle's QUALITY LINE

of Humidifiers and Filters
means **MORE SALES**
MORE PROFITS for you!

Skuttle MANUFACTURING CO. • MILFORD, MICHIGAN



... find what you need quickly
and economically through ...

**CLASSIFIED
ADVERTISING**

Soldering Aluminum is easy

**WRITE
TODAY
FOR FREE
SAMPLES**



Permanent aluminum soldering is made simple and easy with AL-LEN Alumi-Soder. Complete in itself, flux and solder are combined in exactly the right proportion in a convenient "handy-to-use" stick.

L. B. ALLEN CO. INC.
9302 Berenice
Schiller Park, Ill.
—Metropolitan Chicago—

Rates for classified advertising are 15 cents for each word including heading and address. One inch \$7.00. Count seven words for keyed address. Minimum \$2.50 for each insertion. Cash must accompany order. Closing date 20th of month preceding issue.

✓ **BUSINESS OPPORTUNITY**

FOR SALE — Wholesale Heating and Sheet Metal business in midwest city of 400,000. Established nearly thirty years. Owner wishes to retire due to age and health. Property consists of brick building with 15,000 feet of storage space, three door loading dock. Large lot and ample parking facilities. Address Key 1210, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

✓ **SITUATIONS OPEN**

EXCELLENT OPPORTUNITY — for qualified salesmen with established manufacturer of registers, grilles, diffusers distributed through wholesalers only. Sales and potential require full activity. Openings for aggressive men in two territories. Salary, expenses and commission. Forward complete resume and snapshot to Midco Register Corp., 1059 Grand Ave., St. Paul 5, Minn.

ESTIMATOR WANTED: General Sheet Metal Shop, Mid-West location. Wonderful opportunity for right man. Write Key 1202, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

✓ **EQUIPMENT WANTED**

Wanted: Close out lots of warm air residential heating equipment. Write giving description and price to E. L. Bilek, 2025 Zollinger Road, Columbus 21, Ohio.

✓ **AGENTS WANTED**

REPRESENTATIVE WANTED — Manufacturer offering new quality line of registers, grilles, ceiling diffusers, etc. is looking for manufacturers' agents in many sections of the country and is offering exclusive territories, liberal commission basis. This top quality line is an excellent addition for agents handling HVAC equipment and calling on architects, engineers, contractors, etc. Please reply Key 1201, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

PROFITABLE SELLING ... with competitively priced, wide model range of Hi-Boy Low-boy, Vountier-Flo and Horizontal Warm Air Gas (AGA) and Oil (UL) Automatic Furnaces. Representatives calling on contractors or dealers wanted ... territories open. Colorful sales literature describes trouble-free construction, simple, modern design, economical operation. Write now, list lines handled and territories covered, to Key 1211, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

✓ **SITUATION WANTED**

SALES MANAGER — Man under 40 desires new challenge as chief sales executive of medium to small heating or air conditioning manufacturer. Electric heating preferred. Can handle all aspects of marketing. Presently employed as national and export sales manager of heating manufacturer. Address Key 1207, American Artisan, 6 N. Michigan Ave., Chicago 2, Ill.

► **Buy AND HOLD
U.S. SAVINGS BONDS**

**YOUR DOLLARS
FIGHT... for
crippled children**



**National Society
for Crippled Children
and Adults**
2023 W. Ogden Ave.
Chicago 12, Ill.

... move your products in greater volume
through consistent advertising in this

Service Section...

Rates for display space in the Service Section are \$14.00 per inch per insertion. One-inch minimum space accepted. Closing date — twentieth of the month preceding issue.

✓ **AIR LOSS**
✓ **AIR DISTRIBUTION**
IN 30 SECONDS
with
safe • fast • positive
Kilgore
SMOKE CANDLES
Write Today For Catalog
Harvell-Kilgore Corp., Bolivar, Tenn.

 **FLOAT VALVES for**
Evaporative Coolers, Poultry
Troughs, etc.
Operates in 1" of water.
DAN MOREY
814 S. Robertson
Los Angeles 35, Calif.

GALV. STEEL COILS
CUT TO YOUR SPECS.

Popular Gauges
Standard Widths

MILL EXTRAS

SOUTHER STEEL
&
ALUMINUM COMPANY
EV 5-5900 St. Louis 33

 **SO SOFT RUBBER**
KNEE PROTECTORS
EVERY ROOFER SHOULD
HAVE A PAIR.
PRICE \$2.50.
ORDER YOURS TODAY.
JOHNSON
LADDER SHOE CO.
EAU CLAIRE, WIS.

ANNOUNCING —
 **Silent Knight**
DRYER VENT
Assure
Complete
Quiet
All day and
all night
because —
DAMPER FLAP is made of
DU PONT-"FAIRPRENE"®
This rubber-like cloth seals perfectly and
opens easily. Resists heat, cold, moisture.
No more **NOISE** call backs with
"**SILENT KNIGHT**" Dryer vents
Try them
Order from your jobber or write us direct.
ACCURATE
SHEET METAL & MFG. WORKS, INC.
2336-44 Milwaukee Ave. Chicago 47, Ill.

MONMOUTH
HUMIDIFIERS
Made in various
capacities up to
420,000 BTU.
 Write for descriptive
literature, prices and
discounts. Effective
control of humidity is positively
assured by installing Monmouth Humidifiers. Simple
installation and greater customer satisfaction mean
larger profits.
CLEVELAND HUMIDIFIER CO.
7802 Wade Park Ave. Cleveland 3, Ohio

Your advertisement in this one
column by one inch space costs
only \$14.00 per issue — and we'll
provide copy service

Schild **TRIPLE-LIFE**
ALL-PURPOSE
SHEET METAL CUTTER
An essential tool in the air conditioning,
heating and ventilation industries. Cuts
cleanly — straight line, square, tri-
angle, curve or circle. Blades
easily sharpened, thinned or
replaced. Send your order
today!
 **Extra Blades**
With Pins 90c
LIST PRICE
\$5.95
SCHILD MANUFACTURING COMPANY
P.O. Box 412 • Beaver Dam, Wis.

... put new punch
into your advertising
campaign!

You'll develop a real wallop by advertis-
ing in American Artisan's Service Sec-
tion. That's one sure way to sell your
products and to assure complete and
economical coverage. And it's a real
buy when you consider you're reaching
over 10,000 **GUARANTEED** readers
each month at a cost of less
than 1/8c each.
We'll help with the prepara-
tion of copy, too. Just send us litera-
ture and we'll supply a copy suggestion
at no cost. If you decide to use space,
the charge is merely \$14.00 per column
inch per month.

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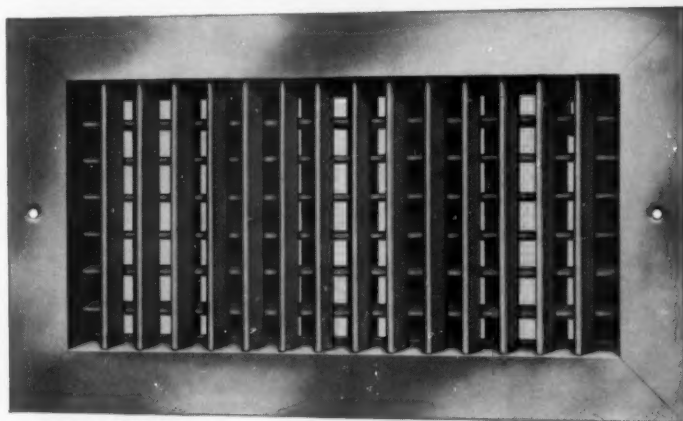
Announcing the NEW EXTRUDED ALUMINUM

WORLD'S LARGEST PRODUCERS
OF REGISTERS and GRILLES

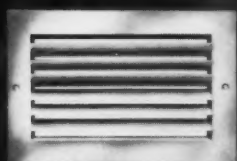


ROYA LAIRE

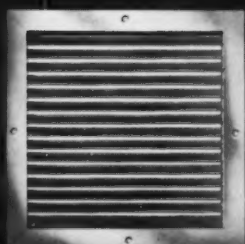
REGISTERS and GRILLES for commercial and residential installations



No. 5G-14-V-OB:
Four-way deflection register with opposed louver volume control



No. CG-H-2:
Double Deflection Ceiling Grille



No. RA-44
Return Air Grille



No. RA-NS
"NO-SIGHT" Door Grille

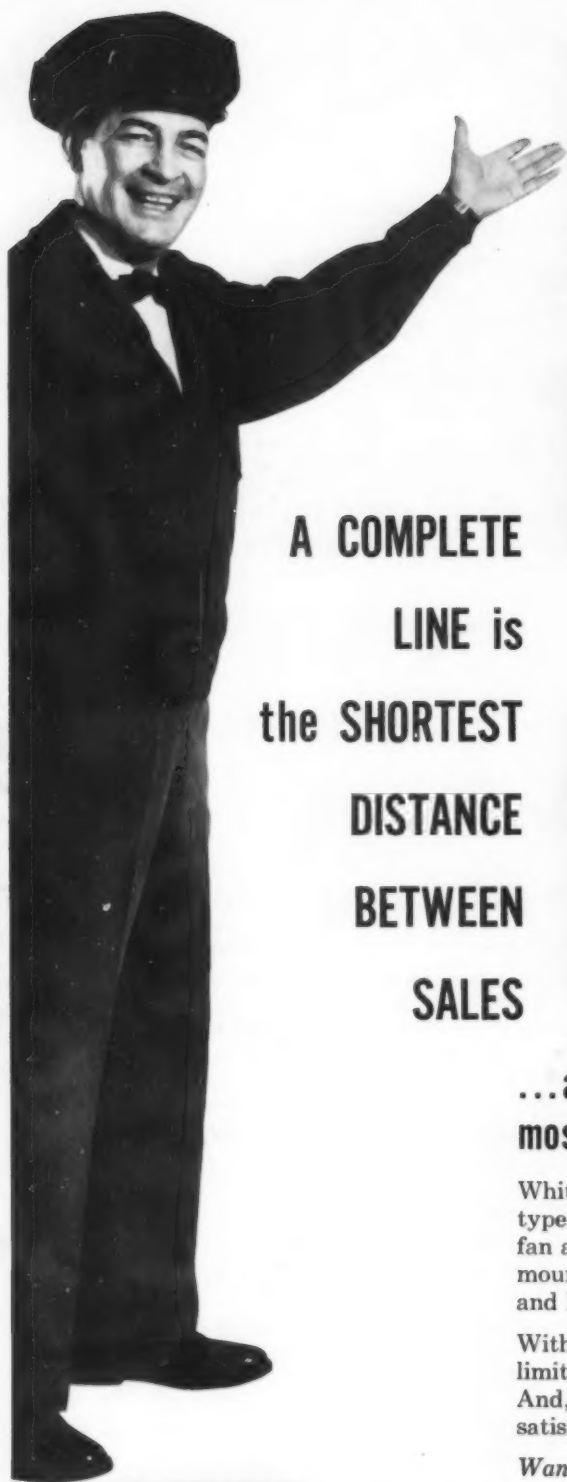
The ROYALAIRE line of registers and grilles is just what the name suggests: The "Blue-Bloods" of the aluminum offerings in this field. Note these important facts:

1. They will provide every directional air flow and volume control desirable for both commercial and domestic heating and cooling.
2. They are constructed entirely of heavy aluminum EXTRUSIONS which are much stronger, more rigid than aluminum rolled stock . . . far less susceptible to damage.
3. Faces are etched to a beautiful satin finish and protected with a clear acrylic coating . . . a permanent finish that is impervious to rusting, pitting or corrosion even where salt air is prevalent.
4. Beautiful as this finish is, it may be decorated in conformity with surrounding surfaces without the slightest possibility of "bleed-through" or the necessity of a prime coat. It affords a perfect base for decorating.
5. The line is complete . . . provides the ideal registers and grilles for every installation.

By all means investigate the ROYALAIRE line
at your H&C Jobbers or write for details.

**HART & COOLEY
MANUFACTURING CO.**

500 EAST EIGHTH ST., HOLLAND, MICHIGAN
IN CANADA: HART & COOLEY MANUFACTURING CO., FORT ERIE, ONTARIO



**A COMPLETE
LINE is
the SHORTEST
DISTANCE
BETWEEN
SALES**



CUSTOMline ACE
Single insertion—
designed for narrow spaces



CUSTOMline DEUCE
Dual elements for
shallow insertions



HYDRAULIC-ACTION
Two controls in one
unit—finest fan and
limit available

...and White-Rodgers gives you the most complete line of Fan & Limit Controls

White-Rodgers makes a fan and limit control to fit every type of furnace... and in every price range. White-Rodgers fan and limit controls are accurate and rugged. They mount interchangeably with other makes... go on in minutes and last for years.

With the complete line of White-Rodgers *quality* fan and limit controls on hand you are ready to handle any job. And, you never have costly "call-backs"... always have satisfied customers.

Want more information? Write for Folder R-1630.



WHITE-RODGERS

St. Louis 23, Missouri
9797 Reavis Road

Toronto 8, Canada
611 Gerrard St. East

Basel, Switzerland
Münchensteinerstrasse 2

4

AMERICAN ARTISAN

April 1961

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Use sheets, angles,
plates, channels,
and metal tubing to
create bulk with

University Microfilms
313 N First St
Ann Arbor Mich
Comp





REQUIRE

LARGE FREE AREA

IN A RETURN AIR GRILLE?

LOOK TO

Air Control...

A COMPLETE LINE PROGRESSIVELY ENGINEERED!

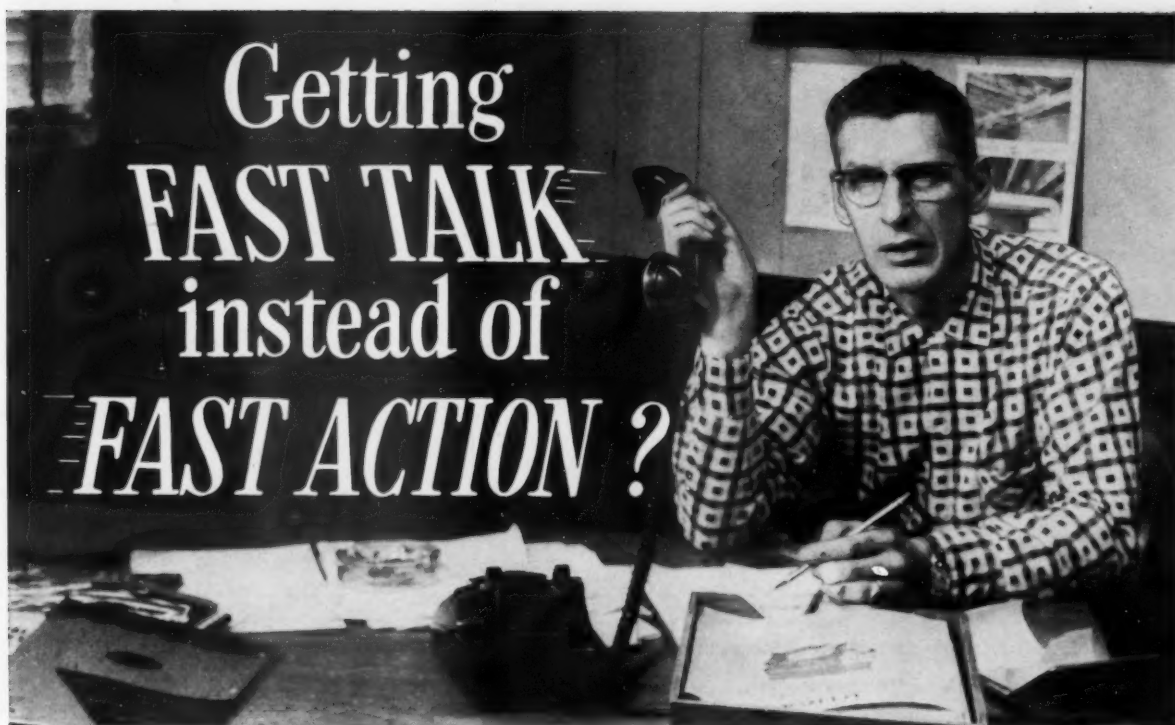
When faced with a capacity problem in a return air grille, you'll find the answer in Air Control's No. 333. Designed for maximum free area at minimum cost, No. 333 Grilles are available in 56 sizes up to 30" x 24" with a BIG 493 sq. in. of free area — enough for any centralized return in a residential system or to cut the number of grilles required on commercial jobs. Decorator styling blends perfectly into interiors. Full depth frets set at 22° angle conceal openings. The No. 333 is easy to install in walls, ceilings or doors. Beige prime coat or metalescent.

The No. 333 Series is an example of the progressive engineering devoted to each product in the line. Write today for your copy of Catalog 60-AC. It covers the complete Air Control line in detail.



AIR CONTROL PRODUCTS, INC. 161 CENTER STREET, COOPERSVILLE, MICH.

West Coast Warehouse: Leigh Industries (California), Inc., 649 S. Anderson Street, Los Angeles, California. **MADE IN CANADA BY:** Leigh Metal Products Ltd., 72 York Street, London, Ontario. **Prairie Provinces Affiliate:** Leigh-Tornel Distributors Ltd., 549 Archibald Street, St. Boniface, Manitoba.



As a heating-cooling dealer, you may have discovered the *performance* you get from certain suppliers doesn't always match their *promises* . . .

If so, it may pay you to take a good look at International!

In International you'll find a company that works closely with *all* its dealers, large or small. That's why there's a distributor and/or company representative stationed right in your area, *instantly available* when needed.

In International you'll find a company whose home office is geared for fast, positive action. That's why the line of communication between the factory and your nearby distributor is always open . . . to give you expert help on any sales or service problem.

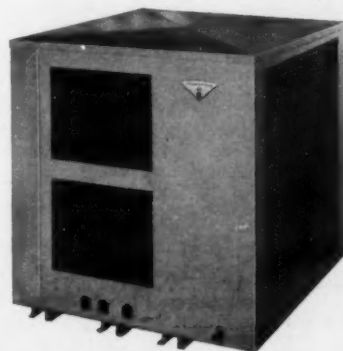
And in International you'll find a company that believes in a real working partnership between dealer and manufacturer . . . A company *big enough* to bring you every major technological advance . . . A company *small enough* to consider the growth of your business a matter of all-out importance.

Get full details today from International, the company that believes in providing Fast Action instead of Fast Talk. Write today to International Heater Co., Utica, N. Y., Dept. A-41.

SPEED UP COOLING SALES WITH THE INTERNATIONAL LINE AIR-COOLED REFRIGERATION UNITS

2, 3, **4** and 5-Ton Capacities

*Performance
proved in
thousands of
installations . . .
easy to install*



GAS AND OIL HEATING
COOLING
ELECTRIC FURNACES
AND HEAT PUMPS



AMERICAN ARTISAN

- Warm Air Heating • Sheet Metal Contracting
- Air Conditioning • Ventilation And Dust Removal

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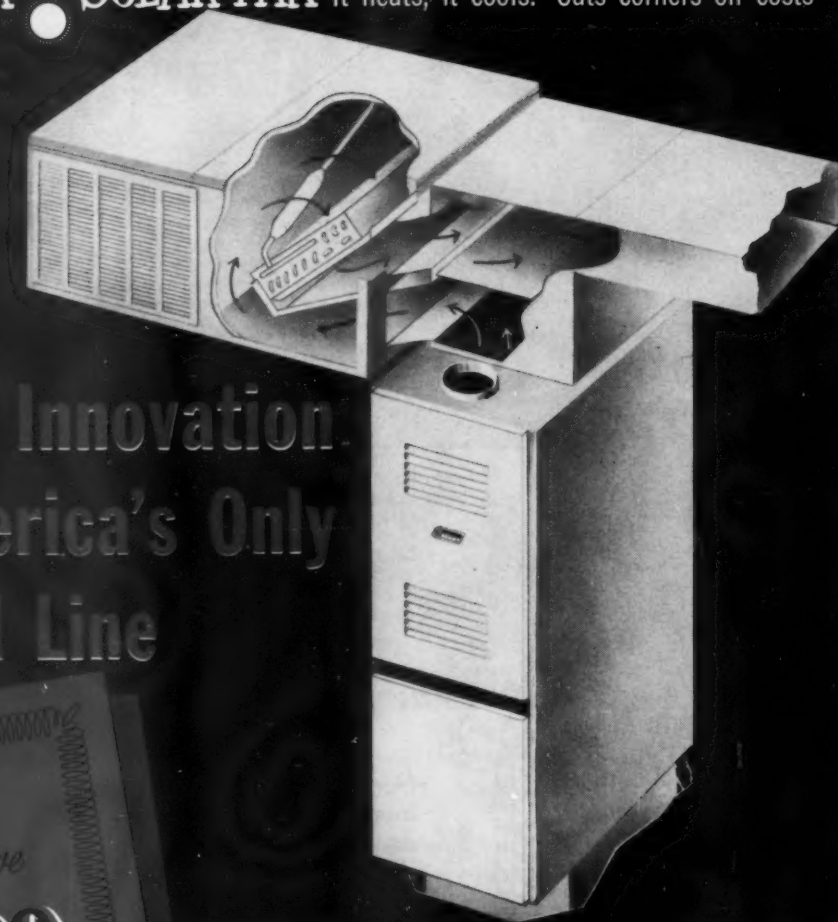
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In America's Only
Bonded Line



SIMPLE . . . DIRECT . . . LOW-COST

So easy! Just short-couple a 2 or 3 h.p. Coleman Polar-Pak unit to a Coleman furnace and your customer has a Polar-Solar-Pak installation. Furnace blower only is needed for complete circulation of conditioned air—summer and winter. No refrigerant lines. No costly transition ducts. You can do the job at remarkably low cost.

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The Coleman Company, Inc.
Wichita 1, Kansas

Coleman builds the most complete and only bonded line of heating and air conditioning. Investigate!

the editor's notebook

Thumbing Through This Month's Artisan

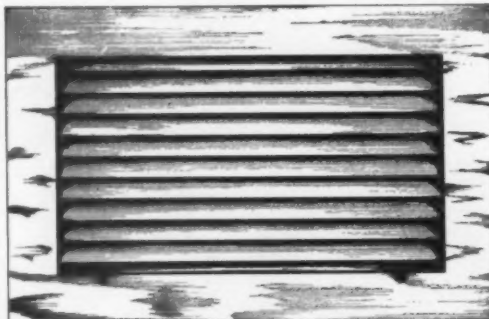
... we are brought up to date on the progress, response, and use of American Artisan's Standards cards for Rating Residential Cooling Systems, which were introduced to the industry a year ago this month. The many orders which have already been filled, and those which continue to arrive at the editorial office are some indication of the acceptance of the card. Some respondents have written to tell how the Standards card has helped them in their sales programs. This prompted us to prepare an outline for salesminded dealer-contractors. *Sell Advantages of Good Design With Cooling Standard Card* explains how salesmen have found that the card has many uses in locating air conditioning prospects, strengthening their sales approaches, and provides an unbiased guide toward aiding the prospect's comprehension of what is expected of a well designed cooling system. Also, performance ratings of "Good," "Fair," and "Poor" are reviewed through further consideration of the essential points in producing a "Good" installation.

Sources

... of future energy are constantly being researched in an effort toward more efficient and economical production methods. Since fossil fuels are being depleted at an accelerated rate, and natural energy sources, such as waterfalls or hydro power, are uneconomical in providing distant distribution, a number of answers to the question *Where Will Future Energy for Heating and Air Conditioning Come From?*

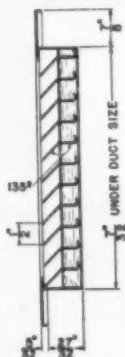
NEW from A - J!

A - J No. 22 Series



Rain and Snow-Proof

EXTERIOR STATIONARY LOUVER



Here's ventilation or fresh air intake *plus* weather protection conveniently combined in a single unit! This stationary exterior louver has closely spaced horizontal bars on $\frac{1}{2}$ " centers. The louver unit is $13\frac{1}{16}$ " in depth, and manufactured $\frac{7}{32}$ " under listed size. All-steel construction throughout on the No. 22 style.

The No. A-22 has an extruded aluminum frame and bars of Armco Aluminized steel which gives an unbeatable combination of strength and durability for long-time exterior application.

Aluminum bug screen available at additional cost. If screw holes are required, please specify.

Write for FREE A-J catalog



A-J MANUFACTURING COMPANY

Dept. A-4 3601 E. 18th St. Kansas City 27, Mo.

the editor's notebook

(Continued)

are contributed in this report from the New Developments Committee of NWAHACA. The article serves to acquaint the reader with future prospects of electrical energy generation as a potential source of energy. These energy generators, operating at extremely high temperatures, convert heat, light, and/or chemical reactions directly into electricity, increasing efficiency over the use of the intermediate mechanical device. Though commercial applications are remote at present, the generators are currently being used for space research projects and weapon development. The committee continues the report with information on nuclear heat, fuel cells, thermionic tubes, MHD generators, and solar cells and engines.

Sound

... is a form of energy which differs but slightly in principle from the flow of heat energy. Just as there are many sources of heat energy, so, too, sound energy has its sources — fans, compressors, people, traffic, etc. If the temperature of a room becomes too high — or too low — we become uncomfortable; likewise when noise or sound pressure becomes objectionable, our comfort can be disturbed. Recent widespread use of outside condensing units, air cooled condensers, and cooling towers has caused a serious cooling equipment noise problem which no longer can be ignored by the industry. *What is Noise?* deals with the acoustical criterion of sound pressure in an attempt to determine the factors contributing to objectionable noise levels and in possible solutions. Some locations have already proposed noise control ordinances for controlled

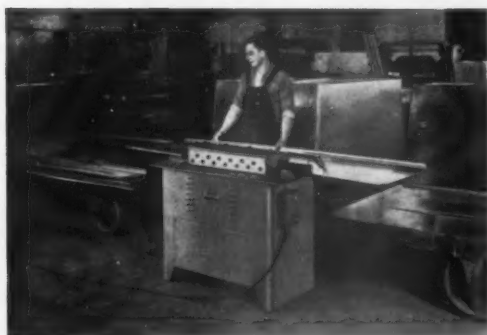


"Once Again
Our Lockformers
Paid Off..."

"Helped Us
Install Over
1½ MILLION FT. OF
DUCT ON SCHEDULE!"



This view shows but a part of the intricate system of ducts installed in the giant exhibition area of McCormick Place, new Chicago exposition center.



Ductwork fabrication and installation was by AL-ZACK—a combined venture of Anderson & Litwack Co., Hillside, Ill., and The Zack Company, Chicago. Here, one of the Lockformers is rolling right angle flanges on a production basis for use as needed during installation.

"Fact is, we could never even handle a job this big without Lockformer equipment," reports Charles Howard, General Manager of The Zack Company, sheet metal contractors and fabricators. "Every Lockformer in the place contributed and, when you figure the time and manpower saved, they must have paid for themselves many times over just on this job alone."

36 Million cu. ft. of air conditioned space in Chicago's new McCormick Place required a lot of ductwork with miles of standing seams, Pittsburgh locks, right angle flanges, cleats and other connections rolled on Lockformers. It meant meeting high quality specs... and a tight schedule.

It's just another example of how Lockformer-equipped shops can handle BIG as well as LITTLE jobs faster and better, using fewer men. (Small shops get the same advantages as big ones, too.)

Send for the Lockformer catalog of machinery and equipment made to handle any size and type of sheet metal job.

LOCKFORMER®

TIME SAVING, MONEY MAKING EQUIPMENT

THE LOCKFORMER COMPANY

Dept. A 4615 W. Roosevelt Rd., Chicago 30, Ill.

In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ont.

the editor's notebook

(Continued)

sound pressure at different frequencies which are not to be exceeded. A sample schedule of sound pressure as proposed in one ordinance is shown, and suggestions are made as to what the manufacturer of the cooling equipment and the installing dealer-contractor can do to help remedy the noise problem.

Excess moisture

... brought about by cooking and sterilization processes is one reason why installation of stainless steel and aluminum equipment and parts has been helpful in maintaining the sanitary conditions desired in canning plants. *How to Solve Sheet Metal Problems in a Canning Plant* explains how a number of sheet metal applications were handled by F. V. Pils, Lockport, N.Y., sheet metal contractor. One difficulty arose in attaching gummed labels to bottles which had just been through a hot water rinse. The drying problem was solved with the fabrication of a slot-type diffuser, using four damper blades set at different angles which covered the entire width of the rinsing machine. Other jobs assigned to the company include paneling of a steam kettle cooking room, and fabrication of produce chutes, washing apparatus, and collecting hoppers.

Cites Value of Trade Associations

ALL TOO OFTEN, the work accomplished by national, state and local associations is either taken for granted or overlooked entirely by both members and non-members of associations. The vital role played by associations in the welfare of the entire industry was described by Secretary of



"... Whether it's a single template or boots and fittings in lots of 10 or 500, stacked 35 to 50 sheets high, we saw it on our Lockformer 24S Band Saw in a fraction of the time it used to take!"

That makes the Lockformer Band Saw a mighty important piece of equipment in the plant of this Chicago producer of standardized pipe, ducts and fittings. Fact is, *anything* in the shop that can be sawed at all is cut on the Lockformer Saw because they get neater cuts easier and faster ... which add up to big savings.

Performance-wise, they are convinced that the Lockformer Band Saw beats anything on the market with twice its motor size (and three times its price!).

How about your shop? Could it use a performer like the Lockformer Band Saw? ... 3-wheel Model 24S with full 24" throat only \$795*; 2-wheel Model 14SM with 13½" throat only \$495*.

*Prices subject to change without notice.

... Get the whole story in the Band Saw Bulletin.



THE LOCKFORMER CO.
Dept. A 4615 West Roosevelt Road
Chicago 50, Illinois

In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ontario

the editor's notebook

(Continued)

Commerce Frederick H. Mueller, who told a meeting of the Washington Trade Association Executives that "too many adversaries are ganging up on business" and that "we must fight harder, longer, and better to protect sound economic growth from the knock-out drops of the left wing theorists and the squanderlust of spendthrifts."

"One of American industry's chief tools in this battle, he said, "is made up of the 2000 national trade associations in the country. We share in pride in the progress of the unique American trade association movement. The Department of Commerce, since the days of Secretary of Commerce Herbert Hoover, has recognized the vital role of trade associations. In fact, the former president often has been called the 'father of the modern trade association.'

"You may recall that years ago he said: 'With wisdom and devotion, their voluntary forces can accomplish more for our country than any spread of the hand of government.' The commerce department — as in Secretary Hoover's time — appreciates trade associations, continually cooperates with them, and shares the common ideal of economic growth generated primarily by private initiative.

Watch Out for Unemployment Chiselers

"UNLESS you are paying the top unemployment compensation rate in your state and are resigned to doing so permanently, it's to your direct benefit to have the system protected from chiselers," suggests the Chamber of Commerce of the United States. "And since employers pay virtually all of the tax, they are the only ones with any incentive to see that the system is policed. So you

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is making
sure of...

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WESTERN
STEEL



On every order for steel, no matter how large or small, the Great Western quality control team is on the job making sure of quality in every possible way.

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REPRESENTATIVES IN PRINCIPAL MIDWESTERN CITIES

the editor's notebook

(Continued)

should be alert for abuses in your community and see that your state UC administrator knows about them.

"One businessman did some checking just in his own neighborhood in a western city and found things like this going on:

- A shiftless young man from a reputable family works at a job long enough to qualify for UC benefits, then quits and loafes until his benefits run out. Then he repeats the process.

- A young housewife, whose husband had a steady job, decided to quit her office work and start raising a family. In doing so, she drew her UC benefits for as long a time as they lasted.

- Two employees of a small plant take a month off each fall to go trout fishing. Their boss always obliges by "laying them off" so they can draw UC benefits while they are away.

- A young man working on his master's degree takes a job during the summer and draws UC benefits when he goes back to college in the fall.

"While UC beneficiaries are supposed to be available for jobs to which they are referred by the employment service, the chiselers have many ruses for ducking jobs they do not want. For example, a housewife may say to her prospective employer: 'My husband is expected to be transferred out of state any time, so I can't say how long I could work for you.' She is pretty certain to remain unhired.

"Such persons do an injustice to deserving employees, for whose benefit the UC system exists, as well as employers who finance the system. The abuses also tend to develop an unmoral attitude among those who are able to chisel off the system."

Custom designed

for Sectional type Gas Burners...

THE MODERN CARRY-OVER TUBE

engineered by you to fit your product!

Now you can get efficient, low cost lighting for your sectional type burners . . . the Modern "Carry-Over" Tube provides integral lighting of sections with a positive flame track between the burners and the pilot. The Modern "Carry-Over" Tube is a stainless steel tube $\frac{3}{8}$ inch O.D. and is available with either single or double rows of lanced ports extending over the active lighting length. The Modern "Carry-Over"

Tube is not an attachment. It is engineered by you to fit your unit and be a smoothly functioning component of your product . . . Write for complete details—no obligation.

also

for safe, convenient and dependable "Outside Lighting" . . . check the advantages of the Modern Lighter Tube featuring "Push-Button" pilot lighting.

MODERN LIGHTERS, INC.

South Lyon, Michigan



WRITE FOR LITERATURE

the editor's notebook

(Continued)

Wholesalers Can Help Dealers Build Profits

THOSE OF YOU who have read this department between May 1959 and April 1960 will recall the monthly comments made by Wilford White, director of the Small Business Administration's office of management and research assistance. Mr. White explained how dealer-contractors could improve their management techniques and as a consequence earn higher profits. Recently Mr. White addressed a group of wholesalers attending a manufacturer's retail management program. He had this good advice for wholesalers:

"The relationship of the independent wholesaler to his dealer-contractors is important to the manufacturer because the success of the dealer-contractor at the retail level is reflected in the success of the manufacturer.

"One of the primary reasons why you wholesalers are here is to learn something that will help the dealer-contractor make more money. Unless your dealers are already operating a perfect organization and have only management problems which they can solve from their past experience, they have a need for your service.

"A manufacturer's retail profit management program will provide information on the best proven ways of administering and operating a retail business. If you are interested in doing a better, more profitable job, here is one way of securing new ideas, procedures for yourself as well as your dealer-contractors without having to work them out the hard way with your own money and time.

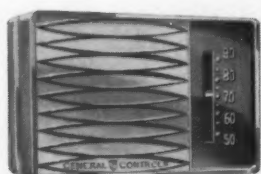
"The Small Business Administration sees a need to help retailers help themselves

IT'S A NEW IDEA

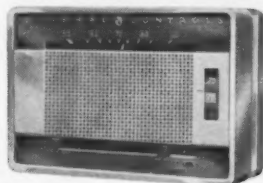
IN A NEW SHAPE...

WITH A SHEER LOOK...

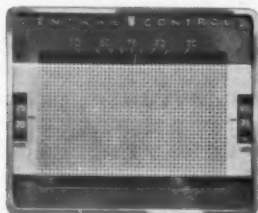
AND LOTS OF USER APPEAL...



HEATING OR COOLING T-99 Room Thermostat with mercury switch dependability and "subtle touch" styling.



HEATING AND COOLING T-91 one dial summer-winter mercury switch air conditioning Room Thermostat with both heat and cold anticipation and "subtle touch" styling.



HEATING AND COOLING, AUTOMATIC SWITCHOVER T-344 Master Control Center with built-in heating-cooling interlock, heat and cold anticipation, mercury switches, and "subtle touch" styling.

IT'S THE SUBTLE TOUCH IN ROOM THERMOSTATS BY GENERAL CONTROLS

Your customers are seeing it in *House Beautiful*. They're asking their architects, builders and dealers about the most desired new line of room thermostats in years. Each model in the new line gives a subtle touch to home decor with clean, classical, horizontal styling. Each carries the name of General Controls, the name that means the very best in room thermostats. Add the sales power of this reputation and style to your heating and cooling installations. Insist on General Controls.



As advertised in *House Beautiful*.

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Automatic Controls for Product or Process
Glendale, Calif. • Skokie, Ill. • Guelph, Ontario, Canada
Nine Plants • 44 Factory Branch Offices Serving
the United States, Canada and Western Europe



**SAY GENERAL CONTROLS
AND YOU'RE RIGHT...AUTOMATICALLY!**

GEN 1-2

the editor's notebook

(Continued)

by making it possible for them to secure the latest and best management assistance available. We believe that the best single source of such help is from their suppliers."

What's Your Dollar Worth Today?

WAGES have gone up, but so have prices. The 1939 dollar is now worth 48 cents. If this erosion continues, pensions, life insurance, and savings accounts bought for \$1 today may pay off in 25-cent or even 10-cent dollars.

Deferred Pay Plan Works for Small Firm

FOR YEARS dealer-contractors have sought a suitable way to compensate employees who have served the company for many years and who have reached retirement age. There are numerous local plans in use for union workers, but in some areas such as small cities and rural communities the unions do not have representation. In such a case, the dealer-contractor might be interested in the suggestions contained in the Small Business Administration's Management Aid 107. Copies are free and may be obtained either from the Administration's field offices or its headquarters office at Washington 25, D.C.

The four-page pamphlet, entitled "Using Deferred Compensation in Small Business," defines deferred compensation as "a method of increasing a key employee's pay in the future rather than in the present. The aim is to provide a way through which, after retirement, he will continue to receive pay from his employer as a reward for past services rendered. Such pay, of course, would be a reduced amount — say one half to one quarter as much



BASEMENT UNITS

GAS FIRED (4 SIZES)

100, 125, 160 and 200 thousand BTU per hr. input.

OIL FIRED (4 SIZES)

.72, 1.0, 1.25 and 1.75 gal. per hr. firing rate.

HI-BOY UNITS

GAS FIRED (4 SIZES)

60, 80, 100 and 125 thousand BTU per hr. input.

OIL FIRED (3 SIZES)

.65, .75 and 1.0 gal. per hr. firing rate.

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Base for installation on combustible floor available.

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.76, .90, 1.12, 1.34, 1.78 and 2.25 gal. per hr. firing rate.

BLOWER FILTER UNITS (2 SIZES)

10" and 12" Blowers.

CHOICE: of Minneapolis-Honeywell Top Controls or Standard Controls on all units.

CHOICE: of Belt or Direct Drive Blower on all units 100,000 BTU or smaller.

ALL UNITS COMPLETELY ASSEMBLED AND COMPLETELY WIRED AT THE FACTORY.

ALL UNITS AVAILABLE AS HEATING AND COOLING COMBINATION UNITS.

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2, 3, 4 and 5 ton capacities.

"A" type coil for vertical air flow.

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and name of
nearest distributor

AIR-EASE

THE JOHNSON FURNACE COMPANY

2129 WEST 117th STREET, CLEVELAND 11, OHIO

the editor's notebook

(Continued)

as his salary during his active years."

Deferred compensation is a practical approach to paying executives and employees in small companies. Basically, it means giving a key man a raise, but paying out the actual money after he has retired. Numerous individual variations are possible, such as having some salary increase deferred and some current, or arranging to pay the postponed income to a man's heirs if he dies before collecting.

Small businesses often find deferred compensation a great help in attracting and holding good management talent in competition with big corporations. From a strict dollars-and-cents standpoint deferred compensation can be a very economical way of providing rewards for services rendered, and security for executives and their families. Protection for the company can be built in to make sure the retired person does not give away trade secrets or start a competing organization.

The money to operate a deferred compensation program can be accumulated through a special fund of securities or cash, or through insurance. Participants for inclusion in the plan can be picked at the discretion of management. The plan does not have to be submitted for approval to the Internal Revenue Service.

This Small Business Aid explains deferred compensation in specific terms and suggests practical steps in getting such a plan started. A typical example will be outlined in this column next month.

Clyde M. Barnes

Editor

No need to "baby" this fiber glass duct liner!



J-M MICRO-BAR'S unique dual-density offers highest resistance to shop damage

Here's a fiber glass duct liner with *two* densities: a tough, heavy-density black surface... and a resilient, light-density backing. It is so flexible, and yet so tough, that you can easily fabricate it by ordinary, every-day methods. You will also find Micro-Bar so kind to hands that no gloves are needed to handle it.

You can form Micro-Bar right in

the brake with sheet metal. There's no danger of wasteful tearing or scuffing. More savings are possible through the elimination of costly metal nosings. An exclusive construction feature of Micro-Bar makes it easy to form erosion-resistant integral nosings or lapped seam joints.

This remarkable new duct liner has greater noise absorption and

thermal resistance. It has earned the *lowest* Underwriters' fire hazard rating for flexible, coated fiber glass duct liners.

For complete information, call your J-M Representative. Or write to J. B. Jobe, vice-president, Johns-Manville, Box 14, N. Y. 16, N. Y. In Canada: Port Credit, Ont. Cable address: Johnmanvil.



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CUSTOMER RECOGNITION is one of the big reasons it pays to standardize on Honeywell matched controls and control systems. You don't have to introduce your customers to a hodgepodge of unfamiliar brands. Seventy-six years of leadership have made Honeywell a name they know and respect.

And look what else you get! **UNDIVIDED RESPONSIBILITY**—you'll look to one dependable source for your complete line of controls. **SIMPLIFIED INVENTORY**—there's a quality Honeywell control and an All-Honeywell control system for every application. **ON-THE-SPOT SERVICE**—with offices in 112 cities, staffed by experienced

sales and service engineers, you'll always have expert assistance and the right replacement controls when and where you need them. **TRAINING SCHOOLS**—your service and installation men will increase their knowledge of the Honeywell line and get the latest information on automatic controls at Honeywell training schools held in your own town or area. Over 100,000 men attend these schools every year.

It all adds up to bigger profits for you. So call your nearby Honeywell office today. Or write Honeywell, Dept. AA-4-31, Minneapolis 8, Minnesota. In Canada, write Honeywell Controls, Limited, Toronto 17, Ontario.

HONEYWELL INTERNATIONAL: Sales and Service offices in all principal cities of the world. Manufacturing in United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.



OR HONEYWELL?



THE HONEYWELL ROUND sets the standard for thermostat excellence, just as the four controls at the right are typical of the quality controls that make up All-Honeywell systems. Whatever your application—forced air, hydronics, gas or oil—there's an All-Honeywell control system that will do the job best!



V 81
Gas Valve



L 498B
Fan Limit Control



RA 816
Oil Burner Relay



L 8024
Aquastat*

Honeywell

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First in Control
SINCE 1885



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"First choice by far!"

—That's what they're saying all over America about Wheeling **sofTITE** Galvanized Sheets! For **sofTITE** has everything sheet metal men want in a galvanized sheet. Here's why:

1. **sofTITE** sheets work easier because they are soft and ductile.
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3. **sofTITE**, made of famed Cop-R-Loy, lasts longer... will give more years of extra service for your customer's dollar.

Get the full facts on dependable, easy-to-work **sofTITE** Galvanized Cop-R-Loy Steel Sheets from your Wheeling man this week. Or write directly to our nearest sales office.



**IT'S WHEELING
STEEL!**



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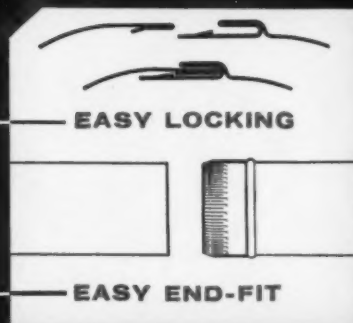
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2 QUICK STEPS TO JOB SATISFACTION

...with MILCOR LOCK-JOINT
FURNACE PIPE



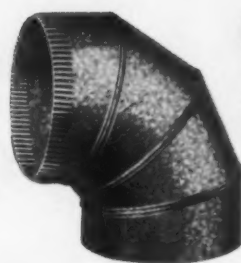
Click . . . and seams are locked!

Easiest-locking seam on the market. Clicks together with little more than finger-touch pressure. You assemble all the joints you need for the job with minimum time and effort.

Joints are quickly, securely connected!

Short fade-away crimp quickly guides male end of joint into connecting joint. Entire distance from end of crimp to bead provides wide bearing surface — forms snug-fitting, secure connection without sheet metal screws.

Milcor Lock-Joint Furnace Pipe is available in 24", 30", 60", and 120" lengths. Popular sizes and gauges in Ti-Co galvanized steel. Ask your jobber or write to us for further information and prices.



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Compute your profits more accurately by eliminating the hidden costs of handmade fittings. Free your men for installation work so you can handle more jobs during the busy season. There's a complete selection of top quality Milcor standardized fittings available to meet every installation requirement. Use them to insure compact, neat-looking, owner-pleasing jobs.

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your reputation on
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LOS ANGELES, MILWAUKEE, NEW ORLEANS, NEW YORK, ST. LOUIS

WHAT'S HAPPENING . . .

Hold Silver Shield Sales Training Seminars

LANSING, MICH. — A joint sales training session was staged recently by members of three Silver Shield indoor comfort bureaus in Michigan, according to the National Warm Air Heating and Air Conditioning Association. Representing the Lansing, Kalamazoo and Pontiac bureaus were: W. R. Fitzpatrick, Al Wilson, Joseph C. Sloane and Lionel Harvey (Lansing); Stanley Elbling and Bryan French (Pontiac); and Harold Guernsey, Jack Van Dalson, Glen Rynbrand and John DeHaan (Kalamazoo).

Another sales training session, held in Lima, Ohio, under the sponsorship of the Lima Indoor Comfort Bureau, attracted 18 heating men from the area. These included representatives from Kline and Altenburger, Home Heating, Russell Orchard Co., Reliable Heating and Air Condition-

(Continued on page 30)

Old Timers To Celebrate 25th Anniversary

CHICAGO — The 25th anniversary of the Old Timers' Club of the Oil Burner Industry, Inc., will be celebrated during the coming OHI convention to be held in Washington, D.C.

Tuesday night, April 25, will be "Old Timers' Evening," and members will gather in the Cotillion Room of the Presidential Arms for the anniversary celebration. Paul B. Holmes, Washington, D.C., has been named silver anniversary chairman. Tickets are \$15, may be purchased from club headquarters at 6809 Elizabeth St., Chicago 36.

Wholesalers to Discuss New Management Tools

COLUMBUS, O. — "Tools and Jewels for Management" will be the theme for the Northamerican Heating & Airconditioning Wholesalers' spring convention scheduled May 21-23 at Montreal. NHAW points out that to survive in the competitive days ahead, it is essential that management have the proper tools to work with. Such tools, it says, will be outlined at the forthcoming convention, and delegates are expected to take home with them many ideas that will prove to be jewels in coping with management problems of the future.

In addition to numerous business sessions, the association has prepared a full program of social activities including golf, sightseeing tours, a banquet and dancing.

The following program has been scheduled:

May 21

- 12:00 noon — Board of Trustees luncheon and meeting
6:30 p.m. — Social hour and reception

May 22

- 9:30 a.m. — Committee meetings (Air Conditioning, Distribution Policy, Education, Statistical, Standardization, Associate Member)
2:00 p.m. — Work shop panel session:
Financial Tools for Successful Wholesale Management. This panel will be moderated by a professional management man, with the cooperation of three member wholesalers, on sales volume groups of less than \$500,000; \$500,000 to \$1,500,000; and over \$1,500,000. Subjects to be covered include sources of long and short term financing; financial analysis;

and methods of financing expansion.

May 23

- 8:30 a.m. — General membership breakfast and meeting
10:00 a.m. — Brainstorming session: What to Do About Your Business During January, February and March
11:00 a.m. — Work shop session: Solving Credit Problems in Our Changing Competitive Economy
2:00 p.m. — Golf, sightseeing
6:30 p.m. — Social hour, followed by banquet and dancing

Work on Exam For Oil Heat Installation Men

NEW YORK CITY — The education committee of Oil Heat Institute of America has approved a draft outline of an installation certification examination. The examination will include sections on General Principles, Warm Air Systems, Accessories, and Conversions. According to OHI, the most modern methods of testing will be employed.

Shipments of Unit Heaters Up; Fans And Blowers Down

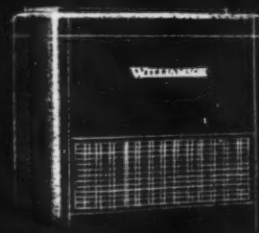
WASHINGTON, D. C. — Shipments of unit heaters and related equipment in the fourth quarter of 1960 amounted to \$24.5 million, according to a report recently published by the U. S. Department

(Continued on page 22)

Your customers will BUY



NEW... Miracle Burner... TWO STAGE OPERATION... famous Triplife iron and stainless steel ribbons... outstanding economy... whisper-quiet.



Famous Seal-Tite® cabinets in Hi-Boy, Lo-Boy and Counter-flow styles. Two-tone Frost green.



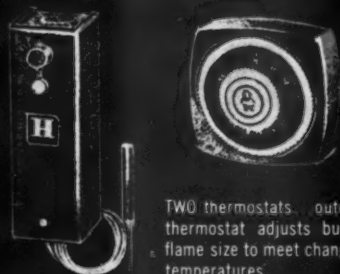
Hi-Boy Model



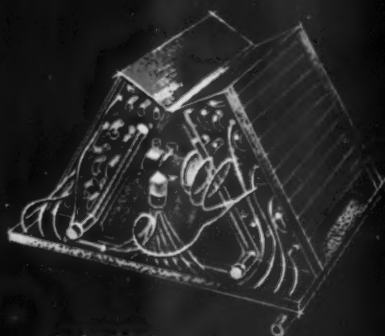
Counter-Flow Model



the difference!



TWO thermostats. outdoor thermostat adjusts burner flame size to meet changing temperatures.



Air Conditioning the Gasaver is designed for summer cooling with EXTRA blower capacity where required.



Lo-Boy Model with Air Conditioning

new **WILLIAMSON** *Gasaver®*



Not just another furnace . . . new distinctive, exclusive features make the Gasaver different . . . set it apart from *all* other furnaces. *Customers recognize, want and will buy the difference that is Gasaver.* The Gasaver represents an engineering achievement, a positive contribution to modern home comfort.

BE A WILLIAMSON DEALER . . .

HAVE exclusive Gasaver . . . a tremendous advantage over your competition

PLUS exclusive Oilsaver in Hi-Boy, Lo-Boy and Counter-flow models

PLUS SUPER Series . . . a competitive line of quality units

PLUS famous Seal-Tite® Duct, Pipe & Fittings
PLUS the complete line of Williamson Air Conditioning units for residential or commercial installations

PLUS a complete line of *free* literature, engineering aids, and selling plans . . . all dealer designed and tested

COPYRIGHT, 1960 — THE WILLIAMSON CO.

THE WILLIAMSON COMPANY
3310 X 16 Madison Road, Cincinnati 9, Ohio



I'd like more information on:

WILLIAMSON Furnaces ☐ Gasaver ☐ Oilsaver ☐ Super Series
☐ Williamson Air Conditioning
☐ Williamson Seal-Tite® Duct, Pipe and Fittings

Name _____ Title _____

Firm _____

Address _____

City _____ Zone _____ State _____

WHAT'S HAPPENING . . .

(Continued from page 19)

Plant Construction Expenditures Up

NEW YORK CITY — Despite the economic slowdown, U.S. manufacturers in the first quarter of 1961 were spending more on construction of new plants and renovation of old ones than they were a year ago, according to a recent issue of "Dun's Review and Modern Industry." U.S. industrial spending for plants in the first quarter is at an estimated annual rate of \$14.3 billion, up from the first quarter 1960 rate of \$14.2 billion, according to figures listed in the Review.

Report Rise in Unit Heater Shipments

(Continued from page 19)

of Commerce and the Bureau of the Census. This was an increase of 16 percent above the shipments made in the third quarter, according to the report.

The report states that shipments of fans, blowers and related equipment in the fourth quarter of 1960 were valued at \$34.1 million, 2 percent below the total for the third quarter.

NAHB Steps Up Fight Against Outmoded Codes

WASHINGTON, D. C. — The National Association of Home Builders' campaign against outmoded building codes which hamper progress in home building is gaining momentum, according to J. S. Norman Jr., chairman of NAHB's building codes committee. Mr. Norman says that the group is now planning to survey all communities

(Continued on page 28)

Schedule Oil Heat Schools in 5 Cities

LYNN, MASS. — First in the 1961 series of oil heat training schools sponsored by the Boston Machine Works Co. was held recently in Ithaca, N.Y. The three-day courses, designed primarily for men who have had one or more years' experience at the installation and service level, are also open to men with less than one year's experience and to those in sales personnel.

Purpose of the course is to teach the necessary specialized procedures required to obtain the highest possible efficiency from any combination of pressure atomizing oil burner with any furnace. Subjects covered at the schools include proper firing rates, combus-

tion chamber construction, baffling, draft control, pulsation, mating of air and oil patterns, field testing instruments, and nozzle application tests.

Upon completion of the course, each qualifying student receives a certificate of completion indicating that he is qualified to do the specialized oil heating work as taught by the school.

Classes are held Tuesday through Thursday, run from 8:30 a.m. to 5:00 p.m.

Schools now scheduled are listed below. Full particulars regarding tuition and room accommodations may be obtained from the registrars.

(More news on page 28)

Schools Now Scheduled

Dates	City	Registrar
Apr. 25, 26, 27	Farmingdale, N.Y.	Carl Schilling, Evening and Extension Div., State University, Agricultural & Technical Institute, Farmingdale
May 9, 10, 11	Portland, Maine	Donald H. McGovern, Maine Oil & Heating Equipment Dealers Association, 574 Congress St., Portland
May 23, 24, 25	Lynn, Mass.	R. L. Dennis, President, Boston School of Advanced Oil Heat Training, 7 Willow St., Lynn, Mass.
June 6, 7, 8	Kalamazoo, Mich.	Joseph D. Hadley, Michigan Petroleum Association, 547 E. Jefferson Ave., Detroit 6, Mich.
June 13, 14, 15	Kalamazoo, Mich.	Joseph D. Hadley, Michigan Petroleum Association, 547 E. Jefferson Ave., Detroit 6, Mich.
July 25, 26, 27	Liverpool, N.S.	Roy McKenzie, Steel & Engine Products Ltd., Liverpool, N.S., Canada

Your best promise of profit for '61!

HONEYWELL'S NEW

RESIDENTIAL ELECTRONIC AIR CLEANER

The profit-package
that introduces THE
SELF-CLEANING HOME!



See how this built-in selling idea works! ➔

**Honeywell's brand new housewife item
that makes the self-cleaning home possible!**



LIVING AREA CONTROL CENTER—The homeowner's visible symbol of clean air—a constant conversation piece.

**Offers dealers, builders
great new profit opportunities!**

Now you can answer that universal complaint: "woman's work is never done". The Honeywell Residential Electronic Air Cleaner traps from 70% to over 90% of all airborne dirt particles in a home. With all its work and money-saving advantages, it offers tremendous selling potential and a good margin of profit. Now, for the first time you can offer your customers a complete home comfort package—heating-cooling, humidity control and electronically clean air.

Cost less than a good refrigerator

The initial low cost of the Electronic Air Cleaner is an important selling point. And because it requires no plumbing and fits easily into any forced air system, it can be installed for as much as \$100 less than other units.

Easy to install and maintain

The complete unit comes to you as a package, pre-assembled and pre-wired at the factory. It can be installed with only minor changes in ductwork and with 120 volt wiring. There are no periodic filter replacements because the cell is permanent, and the homeowner performs all the simple maintenance himself. You keep your profit!

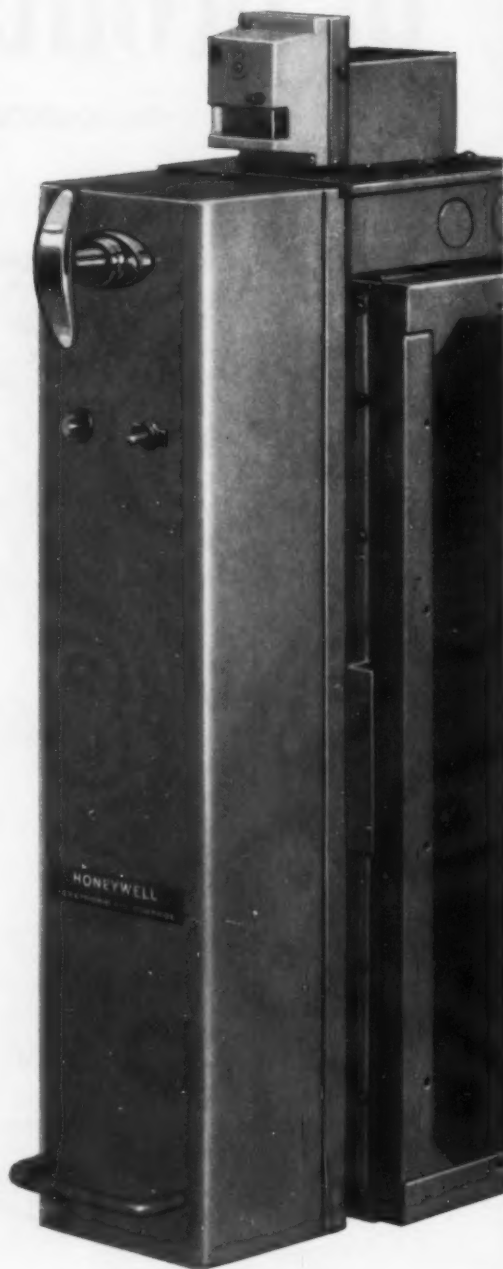
Backed by Honeywell name and service

As a product of Honeywell research, the Electronic Air Cleaner sets a new standard of performance and quality. The name is one your customers know and respect. And with 112 Honeywell offices across the nation, you get sales and training help when and where you need it.

Gives everyone more to merchandise

Added to your present line of heating-cooling equipment, the Electronic Air Cleaner will help you beat the cost-price squeeze by offering builders and homeowners a brand new package. Builders will find it a dramatic new sales feature. Good for your existing home modernization and add-on business, too.

The first designed



Electronic Air Cleaner exclusively for the home!



Women like the idea
of less housework!



Who doesn't want lower cleaning
and redecorating costs!



Talk about banishing smoke and
minimizing odors!



The whole family benefits from
removal of up to more than 90%
of airborne irritants and bacteria.



We're helping you sell it!

See how Honeywell is telling your best prospects
about the benefits of Residential Electronic Air
Cleaning with big, strong advertisements in
House Beautiful, *Better Homes & Gardens*, *Sunset*,
American Home, *House & Home* and many of the
building annuals.

Honeywell



First in Control

SINCE 1885

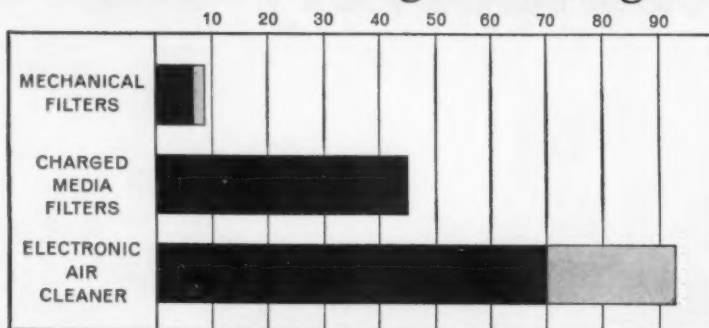
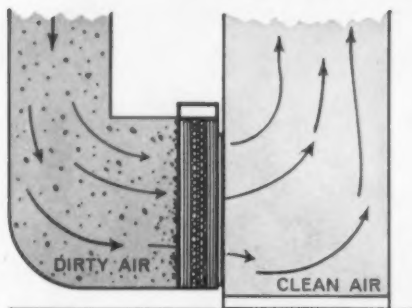


Look at the
selling
advantages
you get →



Reliability is built into
Honeywell's new Electronic Air Cleaner

Fresh sales appeal... Powerful selling advantages!



The Honeywell Electronic Air Cleaner is the most compact unit on the market. It's available in two sizes (20 by 25 and 16 by 25 inches) and is only seven inches thick when installed in the return air duct. Handles up to 2200 CFM (about 5½ tons of cooling—220,000 BTU output, heating.)

Tested by the National Bureau of Standards dust spot method, the Electronic Air Cleaner traps from 70 to over 90% of all airborne particles. By comparison, standard mechanical filters have an efficiency range of from 5 to 8 per cent; charged media filters average less than 50% efficient.



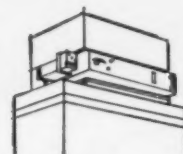
Living Area Control Center provides a constant performance check. Indicates when collectors need washing. Permits remote operation of fan.



Filter-Flag* indicates at furnace or air conditioner and at the Living Area Control Center when the protective screen needs cleaning.



Simple Washing Kit includes everything the homeowner needs to wash the air cleaner collectors (normally once every three months).



One-side Access feature makes it possible to install the unit in any location. Clearance is required only for removal of the door assembly.

Comes completely pre-wired and pre-assembled

The Honeywell Electronic Air Cleaner is shipped from the factory completely pre-wired and pre-assembled. Electricians simply hook up the 120-volt connections. Sheet metal men install in return air ductwork with standard fittings.

It can be installed with any central forced air heating, cooling or ventilating system, in a new or existing home. Compact design fits all types of systems, regardless of model or location.

The unit installs as a boot assembly in the return air duct, just ahead of the fan compartment. Mounts in any position, vertical, horizontal or angular, left or right air flow.

For complete details on Residential Electronic Air Cleaning and for a free merchandising kit, call your nearby Honeywell office. Or write Honeywell, Dept. AA-4-36, Minneapolis 8, Minn. In Canada, write Honeywell Controls, Ltd., Toronto 17, Ont. Sales and Service Offices in all principal cities of the world.



Honeywell



First in Control
SINCE 1885

IT'S

EASIER!

EASIE

WITH

Luxaire®

EASIER!

**To Buy!
To Install!**

**To Sell!
To Convert!**
(for Air Conditioning)

New, low prices on the most wanted sizes and models — all along the complete Luxaire line — make Luxaire Furnaces easier to buy than ever!

The same heavy construction, eye appeal and trouble-free performance — constantly upgraded — give Luxaire Furnaces more sales appeal than ever!

For gas, oil or electricity you receive Luxaire Furnaces in one compact carton — ready for hookup to fuel supply, electrical connection and ducts — for simplest possible installation!

Luxaire Furnaces can be converted for the addition of most capacities of summer air conditioning — without changing the large-capacity, standard equipment blower!

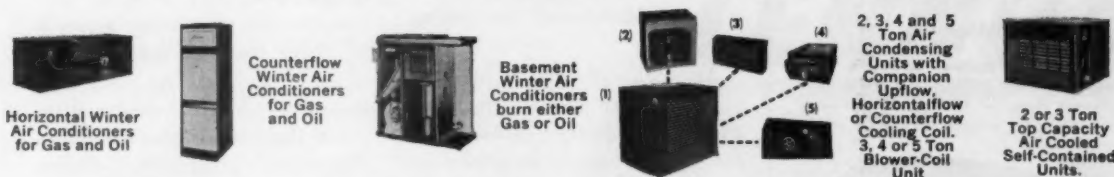
You secure all these advantages — *without the penalty of a big stock* — from your Luxaire Distributor.

Luxaire is the line of excellence that gives you *lowest installed cost* — costs less to buy, less to install and less to stock — keeps your money turning and your profits up!

The superb Gas Fired Upflow Winter Air Conditioner. Heating element is 16-gauge steel with end-welded, die-formed sections. Cabinet has rounded corners for extra rigidity. Blower is the next size larger than adequate for heating only. Controls are top-name brand. 75,000 — 200,000 Btu input.



THE COMPLETE COMPETITIVE LINE OF HEATING AND AIR CONDITIONING



Horizontal Winter Air Conditioners for Gas and Oil

Counterflow Winter Air Conditioners for Gas and Oil

Basement Winter Air Conditioners burn either Gas or Oil

2, 3, 4 and 5 Ton Air Conditioning Units with Companion Upflow, Horizontalflow or Counterflow Cooling Coil. 3, 4 or 5 Ton Blower-Coil Unit

2 or 3 Ton Top Capacity Air Cooled Self-Contained Units.

THE C. A. OLSEN MANUFACTURING COMPANY • ELYRIA, OHIO

Luxaire

HEATING & AIR CONDITIONING UNITS

think again



If you think that fasteners are "chicken feed", think again. Your costs mount up when you use faulty fasteners that slow down and stop assembly

operations, or cause damage to materials and tools.

Why not buy quality fasteners in the first place, and then your fastener costs will really be "chicken feed".

Order Southern Screws from your distributor, or write direct to Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

Over 1,500,000,000 pieces in stock at factory and main warehouse in Statesville, N. C.

Warehouses:

New York • Chicago • Dallas • Los Angeles
Tapping Screws • Machine Screws & Nuts
• Steel Bolts • Drive Screws • Carriage Bolts
• Continuous Threaded Studs • Wood Screws



WHAT'S HAPPENING . . .

(Continued from page 22)

Aluminum Association Celebrates Industry's 75th Anniversary

NEW YORK CITY — The aluminum industry recently marked its 75th anniversary with a celebration held at Oberlin College under the sponsorship of The Aluminum Association. In February of 1886, Charles Martin Hall, then 22 and a recent graduate of Oberlin College, discovered the electrolytic process which first made aluminum commercially abundant. Before his discovery, aluminum was so rare that jewelry was made of it. Last

year, U. S. production exceeded two million tons.

Today in this country, six primary producers operate 22 reduction plants in 13 states. Their aggregate production reached a record high of 2,014,499 tons last year, according to the association, and their productive capacity stands at 2,468,750 tons. This tremendous potential is more than 10 times that of 20 years ago.

The association points out that aluminum, used extensively for roofing, siding, gutters, heating and ventilating ducts, and curtain wall panels, also is frequently used in equipment for the food and processing industries and in textile machinery.

Per capita use of aluminum in the United States last year was 23 pounds, the association states.

Coordinating Committee Confers With Builders

CHICAGO — Members of the board of directors of the Builders' Association of Chicago were guests of the Coordinating Committee of Mechanical Specialty Contractors Association of Chicago at a recent luncheon meeting held for the purpose of discussing bid shopping and bid peddling practices in the building construction industry.

William A. Kuechenberg, past president of the Ventilating and Air Conditioning Contractors Association of Chicago, and chairman of the Coordinating Committee, presided during the meeting. Henry J. Couch, executive secretary of the Ventilating and Air Conditioning Contractors Association and secretary of the Coordinating Committee, set the stage for the discussion and exchange of ideas by presenting a detailed explanation of the Chicago Plan for Separate Mechanical Contracting Bids.

Although differing in ideas as to the proper solution to these and other industry problems discussed, it was agreed in general by those present that much good is achieved by representatives of the various factions of the construction industry meeting for discussion.

NAHB Fights Obsolete Building Codes

(Continued from page 22)

with populations of more than 10,000 with a view to uncovering community requirements relative to specific types of construction, approved materials and allowable minimum and maximum sizes of materials.

Basic purpose of the program, Mr. Norman said, is to aid in promoting NAHB's objective of uniformity of building code requirements. "Too often," he said, "communities are reluctant to accept a relatively new construction technique or material." An analysis of the survey, NAHB hopes, will indicate the number of communities now using progressive building codes which eliminate many of the obstacles to progress in building inherent in outmoded codes.

(More news on page 30)

What do you think makes the Lennox dealer a leader?

Actually there are many reasons—but it starts with a reputation for “quality”



Whether a customer is interested in heating or cooling alone or 365 day air conditioning, Lennox has the *right* equipment at a competitive price. Included in the line are gas, oil, coal and electric heating systems, heat pumps, dual-fuel industrial heaters to 2,000,000 Btuh capacity and air conditioning units from 2 to 25 ton size!

The quality features in Lennox equipment result in fuel savings of about 20%. And this kind of performance helped build the reputation that makes Lennox outsell the next two largest competitors combined!

But there are other important stimulants to success for the Lennox dealer. For one thing, he has a complete line of heating and air conditioning equipment—an economical model for every installation.

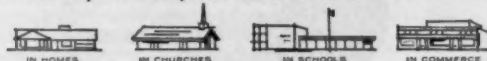
Another reason he's prosperous—he's never made to walk alone! There's a superb field force of trained specialists at his disposal—help for so many tasks and problems that may arise. There are special sales and technical schools for his men . . . liberal financing plans . . . the most complete and thorough merchandising programs in the industry. And advertising designed for action!

Are YOU missing these ingredients of leadership and profit? Then write your nearest Lennox factory for the *complete* dealer story.

Don't be satisfied with less than

LENNOX

Heats, Cools, Treats and Moves Air



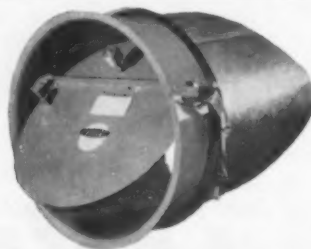
LENNOX Industries Inc., est. 1895—Marshalltown, Des Moines, Ia.; Columbus, O.; Syracuse, N.Y.; Decatur, Ga.; Ft. Worth, Tex.; Salt Lake City, Utah; Los Angeles, Calif. LENNOX Industries (Canada) Ltd.—Toronto, Montreal, Calgary, Vancouver, Winnipeg

FIELD DRAFT CONTROLS

**for oil,
gas, oil-gas, coal
and wood**

**FOR
FURNACES, BOILERS,
INCINERATORS, STOVES,
AND RANGES**

**in all sizes
for flues from
5" through 34"**



FIELD CONTROL DIVISION

Conco Engineering Works, Inc., Mendota, Illinois
AFFILIATES:

Spartan Tool Division — Powered Sewer Cleaning Equipment
Materials Handling Division — Cranes, Hoists
Conco Building Products, Inc. — Bricks, Tile, Stone

WHAT'S HAPPENING . . .

Silver Shield Groups Hold Sales Seminars

(Continued from page 19)

ing Co., W. R. Jewell Sheet Metal Co., John P. Tinnerman Co., West Ohio Gas Co., Palmer Donavin Mfg. Co., D. L. Richey Co., Hawisher Heating Co., and Automatic Supply & Engineering Co. One firm — Kline and Altenburger — sent six representatives. Mr. Kline explained that his company believes selling "is everybody's business, and all our employees should know as much as possible about it."

Sales training seminars are also scheduled for various other cities including Cedar Rapids, Iowa; Memphis, Tenn.; and Buffalo, N.Y.

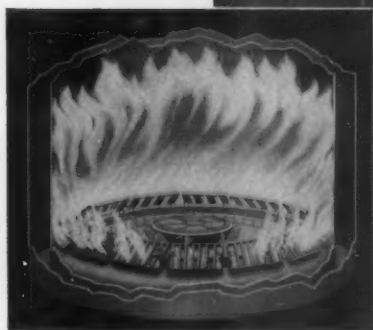
Consumer Expenditures Hit New High

WASHINGTON, D. C. — Consumer expenditures in the fourth quarter of 1960 increased to a new high, according to the Office of Business Economics, U. S. Department of Commerce. Since the middle of 1960, consumer demand has been marked by varying movements, according to OBE, many durable goods declining, nondurables recording differential sales trends for individual products adding up to a stable total, and expenditures for most services continuing upward.

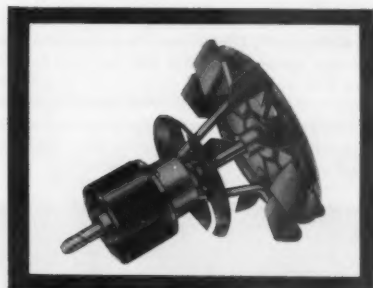
For 1960 as a whole, OBE's report states, total consumption expenditures were \$328 billion, up 5 percent from 1959 in dollar totals, and 3 percent in volume. About 47 percent of the 1960 consumer budget went for the purchase of nondurable goods, 40 percent for services of all types, and 13 percent for durable goods.

Why the *Silent Automatic* WALL-FLAME OIL FURNACE

**gives dealers such good volume
and
good profits**



The Silent Automatic Wall-Flame burner. Customers are assured of fuel economy by the unique Wall-Flame burner. They can see how the silent Wall-Flame sweeps the heating surfaces and how heat is immediately transferred to the heating system. And they are sold when they see owner reported savings of 25% and more; and when, after a heating survey, you can guarantee them fuel savings, in writing. The whisper-quiet Silent Automatic means a lot to the customer accustomed to a rumbling, puffing furnace. No blow-torch roar to the soft, quiet Silent Automatic.



The Silent Automatic Mono-Rotor — the only moving part. Customers are convinced of Silent Automatic's dependability when they can see the only moving part in the burner—the exclusive Mono-Rotor, guaranteed by Silent Automatic for the life of the initial installation. They know they will be getting virtually trouble-free heating with Silent Automatic.



1. It is a proved fuel saver.
2. It has superior and unique selling features.
3. It has obvious high quality.
4. It has a documented record of dependability.
5. It bears one of the oldest and best-known names in heating.

**Growing market for QUALITY means
more sales — bigger profit per sale**

The Silent Automatic oil furnace costs a little more (as does any quality product) *but* thousands upon thousands of Silent Automatic owners have proved they are willing to pay a little extra for *extra value*. Customers in this large and growing market can see proved fuel savings and the benefits of quiet, dependable performance. This is why Silent Automatic dealers earn fair and liberal profits. This is why Silent Automatic equipment sells so well.

Wire, write, phone or mail coupon for more information.



HIGHBOY

GAS...

If you sell gas-fired equipment, you will find unique selling points and the same high quality in the Silent Automatic gas furnace line.



LOWBOY

 *Silent Automatic*
HEATING • COMFORT • COOLING

Silent Automatic Products, 3254 W. 106th St., Cleveland 11, Ohio
(In Canada, 80 Ward St., Toronto)

Please send me literature and specifications on Silent Automatic
☐ Wall Flame ☐ Gas Furnaces and dealer opportunities available.

Name

Firm

Address

City State or Prov.



This STEELMARK of the American Steel Industry tells you a product is made of Steel. Look for it when you buy. Place it on products you sell.



WIN MORE BIG JOB BIDS...



REPUBLIC CONTINUOUS GALVANIZED SHEETS are your key to low-cost fabrication of heating, air conditioning, and ventilating ductwork. Offers excellent corrosion resistance. Easy-forming Republic Continuous Galvanized Sheets won't crack, flake, or peel under any fabricating operations permitted by the base metal. Send the coupon for further information.

REPUBLIC ENDURO STAINLESS STEEL SHEETS open the door to an unlimited number of standard and custom fabrication jobs for you. Sparkling beauty, resistance to heat and corrosion, exceptional strength, easy formability—all make it ideal for fountain and kitchen equipment, interior and exterior building trim, signs, control panels, and countless other applications. Stainless steel, backed up with good fabrication practice, virtually assures maximum customer satisfaction.





with Republic House-Long "K" Gutters

When you're going after big jobs, you'll bring home more contracts by basing your bids on Republic "K" Box Gutter. You can keep your bids more competitive and still make full profit because Republic House-Long Sections cut your installation time and cost. No short lengths to be soldered or series of joints to be lined up. Just position, fasten, and the gutter is installed.

Republic *quality* is an important plus factor, too. One Midwest contractor, who recently put up 22,500 feet of Republic in a new development, cited Republic House-Long "K" Gutter as exceptionally straight and

true . . . good product. Exceptionally straight and true, even though some of the sections were fabricated by Republic in 45-foot lengths.

Republic's *full-range line* of drainage products lets you meet service and price requirements for every job, big or small, and make full profit, too. Your choice of galvanized, terne, and stainless steels, or copper. Complete selections of fittings and accessories.

Before you make your next bid, get the facts on Republic House-Long "K" Gutters and the entire Republic Roof Drainage Products line by mailing the coupon, or contacting your local sheet metal distributor.



REPUBLIC STEEL

REPUBLIC HAS THE FEEL FOR MODERN STEEL

REPUBLIC STEEL CORPORATION

DEPT. AA-2169

1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send more information on the following products:

- ☐ Republic House-Long "K" Gutter
- ☐ Republic Roof Drainage Products
- ☐ Republic ENDURO® Stainless Steel
- ☐ Republic Galvanized Sheets

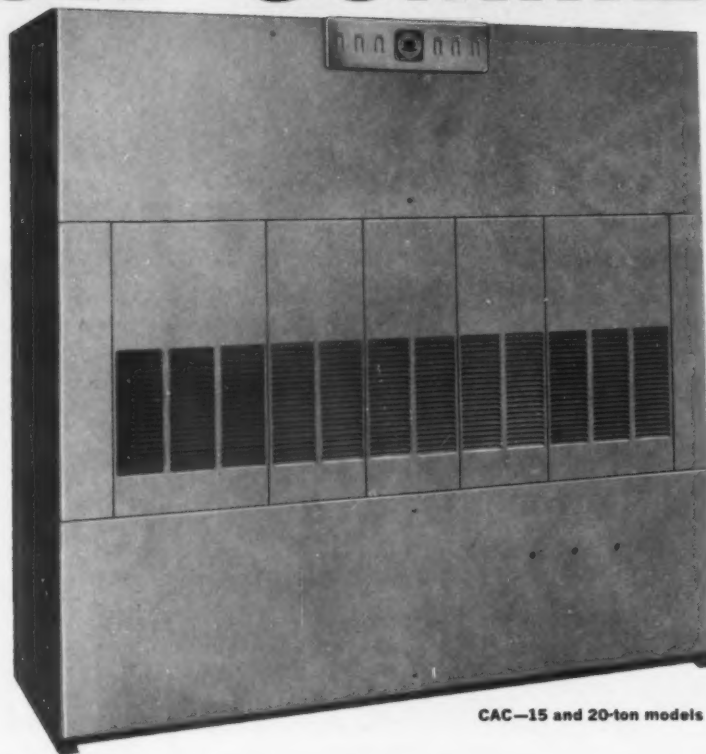
Name _____ Title _____

Firm _____

Address _____

City _____ Zone _____ State _____

NOW-COMMERCIAL



CAC-15 and 20-ton models

NEW!

CAC Units (Water or Air Cooled)—These units are designed for use in restaurants, supermarkets, offices, factories, churches, larger homes, etc. They are available in both packaged and split-system types. The cabinets of the units are compact (see size table, right) and the units are easy to install. They are available in 3-, 5, 7½, 10, 15 and 20-ton cooling capacities. The 3, 5 and 7½-ton units are equipped with a single compressor, the 10-ton units with a single compressor or double compressors, and the 15 and 20-ton units each have two compressors. Optional plenums are available that have four-way adjustable grills. All

SPLIT SYSTEM AIR CONDITIONER



RC-B
Horizontal with Universal Blower
22,000 to 82,000 BTUH



RC-H
Horizontal
21,600 to 56,000 BTUH



RC-V
Vertical
22,000 to 55,000 BTUH

EVAPORATORS

The RC-B evaporator, with its universal blower, can be mounted with its own ductwork or used where a furnace has insufficient blower capacity. The three other "add-on" evaporators shown here offer complete versatility of installation to a dealer.



RC-C
Counterflow
21,000 to 46,000 BTUH

CONDENSING UNIT



AC-B
2, 3, 4, 5 & 7-ton cooling capacity

THE COMPLETE LINE IS

OR RESIDENTIAL-

NEW! ➡

air-cooled models can be used on low ambient applications. The economy version of the 3, 5, 7½ and 10-ton units costs the dealer approximately 5% less, so he's ready to meet competition where price is the deciding factor. The mechanism is the same as the deluxe model, but the unit has a simpler grill.

*Available only in water-cooled type.

	3	5	7½	10	15	20
H	85¾	85¾	87¾	83¾	80	80
W	42	42	50	66	84	108
D	24	24	30	30	31¼	31¼



DeLuxe Unit—
3*, 5, 7½ and 10-ton models



Economy Unit—
3*, 5, 7½ and 10-ton models



AC-BR
Outside Unit
3 & 5-ton

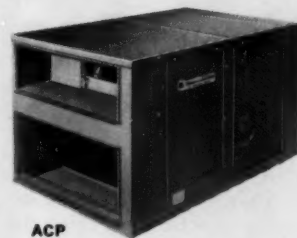
SPLIT SYSTEM



RC-BR
Inside Unit
with Universal Blower

SELF- CONTAINED PACKAGED UNIT

The ACP is a complete, self-contained air conditioner with high-capacity blower. It is designed for installation in attic, breezeway, utility room, basement, crawl space, through-the-wall or outdoors. 2, 3, 4 and 5-ton cooling capacity.



ACP



HEAT PUMPS

PACKAGED UNIT

ACPR 2, 3, 4 & 5-ton

Get the data sheets and price lists on these units today—your American-Standard Air Conditioning Division Distributor has them. This distributor is a specialist—selected because of his experience, dependability and outstanding service facilities. He always maintains an adequate inventory of products for your needs, and he will deliver promptly. Call him today.



AMERICAN-STANDARD!



New Century Sleeve Bearing Motors For Out-Of-Reach Places

Century 48-Frame sleeve bearing motors are now available with PERMAWICK lubricating system. After several years of testing this amazing new material, Century offers a completely new bearing and lubrication system. When a motor must be installed where maintenance is difficult or impossible, this system will assure trouble-free operation.

This new lubricating method meters the lubricant (a high grade turbine quality mineral oil) in the proper amount to the journal surfaces. A perfect oil film is maintained. The oil retention of the PERMAWICK cellulose fibres is superior to any medium previously available. Field tests and accelerated life tests have proved this system—it is even superior to the excellent Century bronze bearing, wool yarn system which we have used for many years.

The redesigned bearing and lubrication system of the 48-Frame motor supersedes the long fibre wool wicking originated by Century fifty years ago. There is a newly

designed thrust device with a capacity higher than previously available. It also includes a new super-finish steel-backed, babbitt-lined journal. The combination of PERMAWICK and the new type sleeve has been proved by exhaustive tests for use in the following severe applications:

- Belted drives with heavy side pull.
- Fan drives with high axial thrust.
- Ambient temperatures as high as permitted by insulation of any type.
- Vertical shafts of all types.
- Requiring five years or more without re-lubrication.

These applications impose unusual demands on the bearing system. Obviously, less severe requirements can be handled readily by the new designs. For additional information on these new motors, call your local Century Sales Office.

CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri Offices and Stock Points in Principal Cities

Century
60-3A

DURA-VENT *Announces* **DURA-CHIMNEY®**



UP TO 60" LENGTHS

LIGHT WEIGHT

FACTORY ASSEMBLY

The ALL-FUEL Chimney

for use with
Gas, Oil, Coal, or Wood

DURA-CHIMNEY is the only factory-built chimney that gives you *light weight, factory assembly*, and a choice of pipe lengths up to 60 inches.

Construction: DURA-CHIMNEY consists of three concentric pipes: a 7-inch stainless steel flue surrounded by a middle pipe of aluminized steel, and an outer pipe of galvanized steel.

Weight: DURA-CHIMNEY weighs only 6 pounds per foot. None on the market weighs less; most weigh more.

Efficient: Low thermal mass permits quick, adequate draft.

Assembly: DURA-CHIMNEY is ready to be lifted from the shipping carton and set in place. No special tools or training are required.

Safe: Listed for use by Underwriters' Laboratories.

For further information write:

DURA-VENT CORPORATION

Factory and Western Sales Office:
2525 El Camino Real, Redwood City, California

Factory and Eastern Sales Office:
1400 West Ormsby Ave., Louisville 1, Kentucky



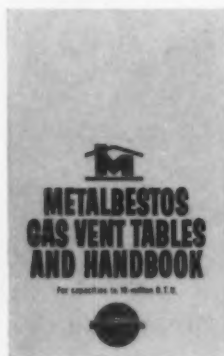
Dura-Vent
is a subsidiary of
Dover Corporation



More sales power from Metalbestos

NEW METALBESTOS QC IS RATED FOR 10-MILLION B.T.U. AND BACKED BY EXACT DATA FOR QUICK, SURE INSTALLATIONS

for the fast-growing multiple-story and commercial markets which demand technical know-how, dependable gas vent systems and minimum installation manhours. Ask your jobber salesman for all the details.



The new METALBESTOS GAS VENT TABLES and HANDBOOK

for sizing vents from 3" to 24" and for capacities to 10-million B.T.U. Available through Metalbestos distributors.





SOMETHING

FOR YOU TO CROW ABOUT FROM

bryant

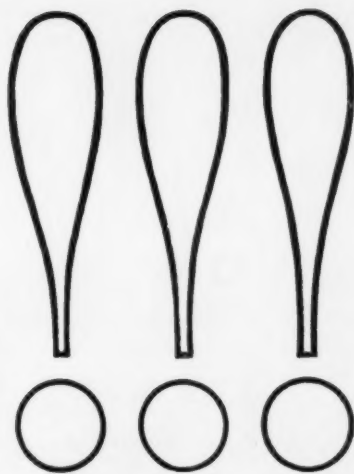
TWO NEW



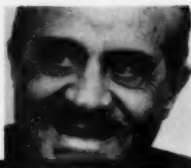
395 SERIES Last word in a deluxe furnace for the better new home and replacement market.

393 SERIES Top-styling, Bryant quality and features in a furnace priced for low in-place cost.

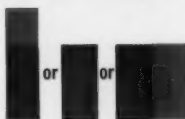
LINES



STYLED BY RAYMOND LOEWY...foremost American designer. Smart colors and design are combined in a manner that says "quality" at first glance. The "furnace" look is gone. These units sparkle with beauty that makes them easier than ever for you to sell at full margin



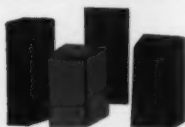
MORE JOBS WITH FEWER MODELS Bryant's unique 1961 design offers upflow, downflow and basement models in both the 393 and 395 series. By use of counterflow and drop duct kits, Bryant's basic furnace will meet any of these applications. More flexible local stocks mean faster delivery to your job.



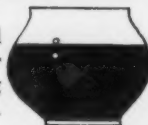
NEW "MORE FOR THE MONEY" VALUE Bryant, always tops in quality and features that appeal to customers, now puts you in a better pricing position than ever before.



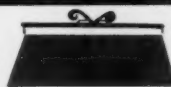
NEW COMPLETE LINE You can sell both the "price" buyer and the man who wants to "go deluxe". Series 393 and 395 have no "gaps" in the line. You can size to the job. Series 393, 80,000 Btu to 150,000 Btu; Series 395, 80,000 Btu to 400,000 Btu.



NEW QUIETNESS Bryant's big, powerful blower is very quiet, and is designed to handle the volume of air required by summer cooling. Other features include the rigid, one-piece welded casing and Bryant's fuel-saving burner that splits the fire to "scrub" the sidewalls of the heat exchanger.



FLEXIBLE FINANCING to fit your own and your customers' needs.



...AND THAT ISN'T ALL. FOR THE FULL STORY ON THE NEW BRYANT PROPOSITION call our local distributor or factory branch.

bryant

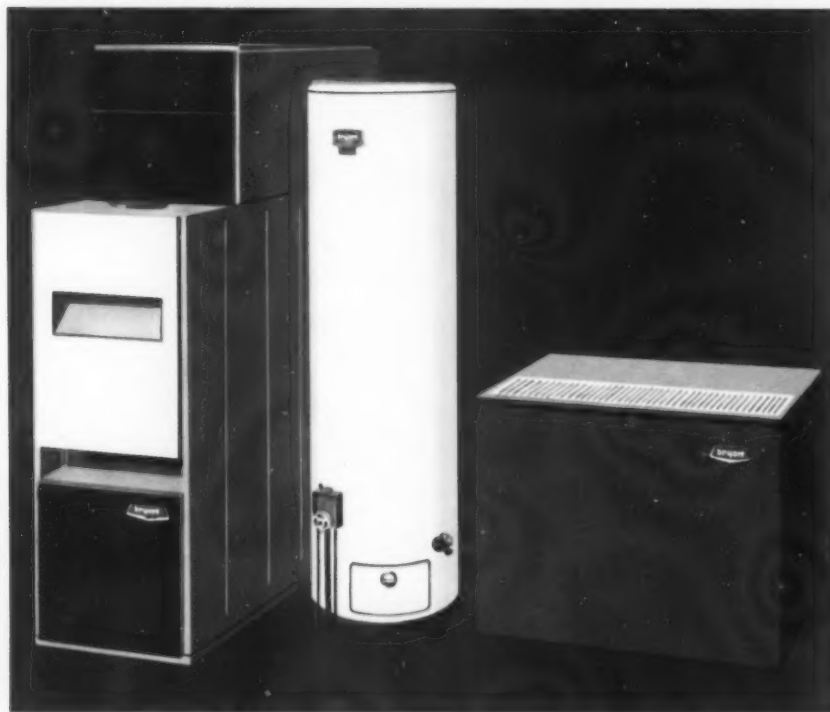
BRYANT MANUFACTURING COMPANY
Indianapolis 7, Indiana



NEW IDEA

TO HELP YOU MAKE 3 SALES INSTEAD OF 1

BRYANT HOME COMFORT CORE



The Bryant Home Comfort Core is an easy way to get prospects to think in terms of buying complete year 'round comfort instead of a single piece of equipment. It combines an air conditioner, a furnace and a water heater.

It is a lot easier to sell two or three related products at a time than you may think. Dealers tell us that 3 out of 5 air conditioning buyers are pushovers for a new furnace.

Builders *have* to include a furnace and water heater. Smart builders—north and south—are now including air conditioning **TO HELP SELL HOMES.**

With the Bryant Home Comfort Core you can offer them the whole package and with it one of the most sensible, down-to-earth new home merchandising programs you've ever seen. It's flexible enough to fit both small and large builders.

12 REASONS WHY DEALERS LIKE BRYANT

1. A MOST COMPLETE LINE of products and range of prices to fit your market.
2. SALES AND SERVICE HELP from nearby distributor or factory branch.
3. FAST DELIVERY from local stocks.
4. EXCLUSIVE FEATURES make selling easier.
5. NATIONAL REPUTATION helps you sell.
6. LOCAL ADVERTISING with factory and distributor help.
7. STABLE SALES POLICIES that protect you.
8. SOUND SALES and technical training.
9. BUSINESS MANAGEMENT aid helps you keep profits.
10. BRYANT'S financial strength.
11. LIBERAL FINANCING and credit tailored for you.
12. GAS AIR CONDITIONING.

Ask your Bryant distributor or factory branch about how the Bryant Home Comfort Core and its merchandising plan will help you do extra — and profitable — business.

BRYANT MANUFACTURING CO.
Indianapolis 7, Indiana

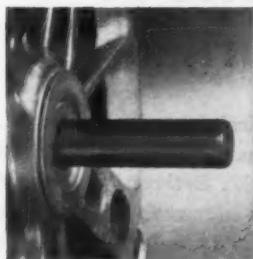
Join up with Bryant

bryant

the company on the move!!!!

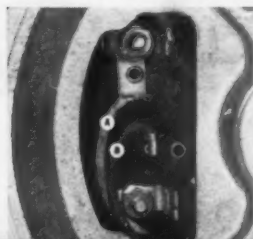


**INSTALL IT!
FORGET IT!**



SHAFT PROTECTION—new gun-metal-like treatment of shaft resists rust so the blower is always easy to remove.

FAST ROTATION CHANGE cuts your inventory in half. Simply reverse leads ("A" to "B").



AIR-SHIELD DESIGN transmits heat swiftly, greatly reducing "trip-outs" that result in time-consuming service calls.

4-YEAR LUBRICATION at factory practically eliminates reoiling. Motor has doubled oil supply.



It's that simple when you use General Electric oil burner motors

General Electric's oil burner motor will give years of reliable service on the oil burners you install, service, or build. This means a high degree of customer satisfaction with the furnace equipment you supply since you practically eliminate call-backs or emergency service calls.

Contributing to the motor's long life are a rust-resistant shaft, a special air-shield design, four-year lubrication at factory (see photos), a wear-resistant switch, and moisture-resistant Mylar® polyester film insulation.

All these extra-value features are yours when you specify "G-E motors" on the oil burners you buy. They're also ideal for replacement purposes. For more information, write Section 738-06, General Electric Company, Schenectady 5, N. Y.

* Registered Trade-mark of DuPont Co.

Progress Is Our Most Important Product

GENERAL  ELECTRIC



Why Bethcon Galvanized Sheet makes the best ductwork

When you flex a piece of Bethcon galvanized sheet steel, you notice it has a "feel" of its own, a certain extra something. Liveliness, if you will. Toughness, perhaps. Or strength with ductility. Whatever you choose to call it, you'll find that it sinews the Bethcon sheet to form up into a strong, rigid end product.

There's good reason for Bethcon's unique quality. Bethlehem's continuous galvanizing lines include a special annealing cycle which imparts to the basic steel the strength-with-ductility that makes the sheet so desirable. Seconds later, the rich coating of zinc is applied so tightly that it permits forming never consid-

ered practical for galvanized steel.

If you have not yet familiarized yourself with Bethcon, you might like to talk to someone who has. Or perhaps you'd prefer to discuss it with one of Bethlehem's representatives. Either way, you'll get prompt attention by getting in touch with our nearest sales office.



for Strength
... Economy
... Versatility

BETHLEHEM STEEL COMPANY, Bethlehem, Pa.
Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



Checkmate Customer Complaints To Increase Sales

EVERY INDUSTRY MUST DEPEND upon the confidence of its customers if it is to grow and prosper. Inattentiveness toward the welfare of customers tends to influence future sales to prospects. This often overlooked fundamental can have a chain-like effect on the sale of central summer air conditioning in many residential areas where one unhappy customer may influence the decision of a dozen interested prospects.

Some of the situations that create dissatisfied customers can be corrected — or avoided altogether — if all segments of the industry will work together toward this goal.

What are some of the troublesome situations that can be smoothed out to the advantage of all parties — the customer, dealer-contractor, wholesaler and manufacturer? One area lies in the realm of quick and accurate parts replacement. We know of one case where it was necessary for a dealer-contractor to send an employee 90 miles to a factory to obtain an essential part for a summer air conditioning system in order to complete an installation on schedule. This avoided the possibility of cancellation of two other contracts that hinged upon the satisfaction of the first customer.

The dealer-contractor should have been able to obtain the needed part from his local supplier, but it was found that this part was not in stock. A long distance phone call to the manufacturer revealed that, although the part would be shipped immediately, it would be three to five days before it would arrive.

In situations of this type, if delivery can be expedited, many of the dealer-contractor's problems in building customer good will and confidence would be eliminated.

Another source of problems faced by dealer-contractors in their servicing of installed equipment, is the large variety of controls used.

If some arrangement were made, whereby similar controls could be more easily interchanged, it would reduce the number of trips made by servicemen to the shop or to the wholesaler's warehouse to obtain the exact replacement needed. Quick, accurate, low cost service calls help customer relations and gain acceptance of prospective customers.

A third source of trouble that influences the sale of central summer air conditioning can be traced to noise conditions created by remote condensing unit locations. A number of prospects for summer air conditioning have lost interest because they are reluctant to face the displeasure of neighbors who might object to the noise made by condensing equipment.

Many of the problems involving summer air conditioning equipment are being worked on, and when they are solved, improved customer relations will be enjoyed, adding to the prestige accorded this industry's products.





Sell Advantages of



PROSPECTS FIND the *Standards* card makes it easy for them to understand the essential elements involved in the purchase of an air conditioning system. Gordon J. Justin, Domestic Sheet Metal Co., Rocky River, Ohio uses them as a direct sales tool

Five Reasons Why People Buy

WHEN A PROSPECT's major interest can be quickly identified, the salesman is in a good position to direct his appeal toward the strongest buying motive. Key reasons for buying are:

- | | |
|-------------|-----------------------|
| 1) Profit | 4) Convenience |
| 2) Security | (comfort) |
| 3) Health | 5) Pride of ownership |

SINCE AMERICAN ARTISAN introduced to the industry its Standards for Rating Residential Cooling Systems card a year ago this month, there have been over 30,000 copies of the card used by dealer-contractors to help them show their prospects how to buy a well-designed summer air conditioning system. Even during the coldest weather of the past winter, orders continued to arrive at the editorial office at the rate of about two a week. These orders ranged from 25 to 1000 copies, depending upon the use for which they were intended.

Some dealer-contractors have used the 8 $\frac{1}{4}$ x 11 in. card as a direct mail piece, accompanied by a sales letter explaining to prospects how the card should be used and suggesting that they arrange an appointment to learn more about properly air conditioning their home.

Good Design With Cooling Standards Card

One year old this month, the card has proven its value in selling against quotations based on inadequate engineering

The Standards for Rating Residential Cooling Systems cards have also been used in conjunction with the Standards for Rating Heating Systems cards — introduced in 1957 by American Artisan — by dealer-contractors to assist prospects in selecting a good year 'round home air conditioning system.

Aid to Selling Quality

Other dealer-contractors have used either or both *Standards* card with modernization check-lists (introduced by American Artisan in 1958) to locate exclusive prospects. John Deterding, Deterding Air Conditioning, Collinsville, Ill., says, "The check-lists and the *Standards* cards are inseparable in locating prospects and in building the sale."

Hundreds of other dealer-contractors have found that the Stand-



DISPLAY OF the *Standards* card establishes the air conditioning dealer-contractor as an installer of quality systems. Ridgeway Heating and Air Conditioning Service, Lansing, Ill. maintains a supply in their literature rack at all times

ards for Rating Residential Cooling Systems and Standards for Rating Heating Systems are their best approach to selling quality systems at a fair price, against inadequately designed and recommended systems by companies with insufficient technical training and understanding of the elements involved in giving the prospect the type of system required.

Companies grouped in this category are those dealing in the sale of appliances, commercial and residential refrigeration, hardware stores, and similar businesses that do not specialize in a field as technical as air distribution.

Dealer-contractor Gordon J. Justin, Domestic Sheet Metal Co., Rocky River, Ohio, says, "I present each prospect with a *Cooling*



continued . . .

Cooling Performance

Standards card to help him understand the need for good engineering."

Dealer-contractor Herb Tanis, Ridgeway Heating and Air Conditioning Service, Lansing, Ill., says, "As a dealer-contractor, I feel that a prospect can be served best by helping him buy the kind of job he needs. Also, the *Standards* card is an excellent sales tool for the dealer-contractor because it enables him to use the 'Good' classification to sell a better job, with the result that he is able to earn a better profit."

At St. Simons Island, Ga., Buddy Culver, Culver Heating and Air Conditioning Co., states, "I have supplied all the architects in the area with a copy of the *Cooling Standards* card because many of them and their engineers are not aware of recent developments in residential air conditioning practices, and if permitted would write specifications that would rate as only 'Fair' when judged against the capabilities of today's equipment. They need American Artisan's *Cooling Standards* to help them design systems that will provide the best indoor conditions possible for their clients."

Three Classifications

The classifications mentioned by Herb Tanis — "Good," "Fair," and "Poor" — are based on 12 important points that should be carefully weighed by persons pur-

chasing residential summer air conditioning systems. Dealer-contractors point out to the prospects that these are the points given consideration by engineers when designing home cooling systems.

Rating Based on 12 Factors

These 12 essential points have been the basis for a series of articles by S. W. Reid, who has written exclusively for American Artisan on the subject of residential air conditioning since August, 1952. This series of articles spells out the conditions under which a system can be rated as "Good," "Fair," or "Poor."

The rating is based upon its performance, which in turn is often based upon the skill of the engineer when he considers the variations entering into the design

of each air distribution system, and the selecting of mechanical equipment for individual residences.

The 12 points that should be discussed by the dealer-contractor and a prospect in order to qualify the price that he will ask for a quality installation are:

- 1) Room temperature
- 2) Air temperatures between 3 in. above the floor and the 60 in. level
- 3) Temperature variations between rooms
- 4) Humidity
- 5) Drafts
- 6) Ventilation
- 7) Noise
- 8) Blower operation
- 9) Appliance venting
- 10) Air filtering or cleaning
- 11) Insulation of ducts
- 12) Sun shading of areas



AS A HANDOUT SALES tool, the *Standards* card serves to locate air conditioning prospects. Buddy Culver, Culver Heating and Air Conditioning Co., St. Simons Island, Ga., uses them in this manner

Explained in "Kitchen Language"

The performance of each of these 12 points is tabulated under the three classifications of "Good," "Fair," and "Poor," which spell out the accepted recommendations of the industry's leading engineers. These recommendations are based on data collected from both laboratory and field tests. The 12 points listed under the "Good" classification can be used by dealer-contractors or their salesmen to introduce the benefits of living in a summer air conditioned home.

Sales approaches used by salesmen vary with each individual. But it has been found that the most successful salesmen are those who study their prospects carefully and determine the prospect's major interest, then use this as a basis for their presentation.

Identify Buying Motive

People are inclined to buy for many different reasons. Thus, at the opening of the sales presentation, it's to the salesman's advantage to use a probing technique to bring out the prospect's dormant buying habits, and enable the salesman to capitalize on his knowledge of the product and the service it will perform for the benefit of the prospect.

Sales approaches must differ not only with individual prospects but also with the type of air conditioning system to be sold. In selling an add-on summer air conditioning system for an existing home, the salesman would use a differ-

ent approach than he would use to sell a person planning to build a custom made house. Approaches that have been found to be most effective with each of these groups are those that quickly identify the prospect's buying motive.

Five Reasons for Buying

It's also known that buying motives can be classified, in general, into the following five categories. People will buy for reasons of:

- 1) Profit
- 2) Security
- 3) Convenience (comfort)
- 4) Pride
- 5) Health

Thus, an air conditioning sales presentation must appeal to the prospect's buying motive or motives in as pointedly a manner as possible.

Define Your Terms

To help identify the prospect's buying motive, the salesman can use a 3½ x 5 in. card on which is reproduced the American Society of Heating, Refrigerating and Air Conditioning Engineers' definition of year 'round air conditioning. This card is presented to the prospect to show that the conversation will be based around the definition as outlined by the industry's technical society.

This definition reads: "Air conditioning is the process of treating air so as to control, simultaneously, its temperature, humidity,



EVERY PROPOSAL for a summer air conditioning system contains a *Standards* card when it is mailed by Domestic Sheet Metal Co., Rocky River, Ohio

cleanliness, and distribution to meet the requirements of the conditioned space."

Standards Cards Sell

Salesmen who have used this opening find it is most effective when read aloud to the prospect. These salesmen also present a copy of the *Cooling Standards* card while the definition is being read and, upon completion of the definition, will add this comment — "This card has been developed by American Artisan, the industry's leading trade publication and



continued . . .

Standards Card Eases Sales Job

therefore it is an unbiased, accurate reflection of the industry's technical know-how, and has been designed to help you make a wise decision."

Refer to Standards

The salesman then proceeds to explain to the prospect that, as he discusses air conditioning for the prospect's home, he will periodically refer to the *Standards* card to point out the need for consideration of the 12 points so essential to producing a good installation.

To prevent prospects from thinking that they need a technical background to understand the card, salesmen start by discussing health benefits derived from summer air conditioning. These include: fewer airborne bacteria, removal of pollens that contribute to hay fever and asthmatic conditions, comfortable temperatures which help keep the heart from overexerting itself, temperature conditions that provide the right kind of atmosphere for a good night's sleep, etc. All of these benefits contribute to fewer tensions and less fatigue.

Two other benefits that can be introduced by salesmen are the reduction in outside noise (because windows are kept closed), and odor control within the house, which is made possible by the use of accessory equipment. This equipment either provides for the introduction of fresh outside air through the conditioning equipment, or filtering devices containing activated charcoal, or a combination of both methods.

As a salesman builds the prospect's comprehension of what a well-designed air conditioning sys-

(Continued on page 53)

STANDARDS for Rating Residential Heating and Cooling Systems cards can be used for presentation by salesmen, as give-away items for home shows, as direct mail pieces, etc. Designed to assist homeowners in their purchase of a quality summer air conditioning system, the two-color check-lists are available at the following prices:

Quantity	Cost
50	\$ 1.25
100	2.35
200	4.50
300	6.60
400	8.80
500	11.00
1000	21.00
2000	42.00
3000	63.00
4000	84.00
5000	105.00

To: The Editors
American Artisan
6 N. Michigan Ave.
Chicago 2, Ill.

Please rush the following quantities:

_____ **Standards for Rating Cooling Systems cards**

_____ **Standards for Rating Heating System cards**

Enclosed is my check for \$. . . to cover reprinting costs.

(Please Print)

Name _____

Company _____

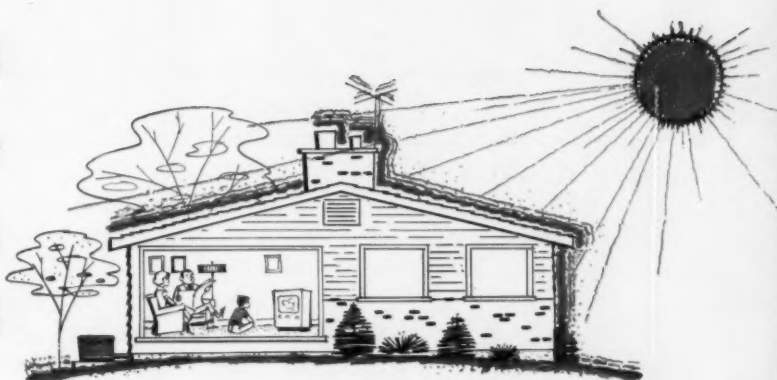
Street Address _____

City and State _____

I am a dealer _____ wholesaler _____ manufacturer _____

other _____

STANDARDS for RATING RESIDENTIAL COOLING SYSTEMS



Maximum comfort can be expected from central residential summer air conditioning systems designed to meet the conditions set forth under the **GOOD** classification.

	GOOD	FAIR	POOR
ROOM TEMPERATURES	Between 76 & 78 F	Between 78.1 & 80 F	Over 80 F
AIR TEMPERATURES BETWEEN 3 and 60 in. LEVEL	Less than 4 degrees	Between 4 & 7 degrees	Over 7 degrees
TEMPERATURE VARIATIONS BETWEEN ROOMS	Less than 2 degrees between coolest and warmest rooms	Between 2 & 4 degrees from coolest to warmest rooms	Over 4 degrees between coolest and warmest rooms
HUMIDITY	*Stable	Moderate variation	Large variation
DRAFTS	No noticeable drafts in any occupied area	Discomfort from drafts at specific spots in an occupied area	Discomfort throughout occupied area
VENTILATION	No stale odor in house	Stale odor in house	Objectionable odors in house
NOISE	Equipment is quiet	Equipment noise is noticeable	Equipment noise is objectionable
BLOWER OPERATION	Constant	Cycles with compressor	
APPLIANCE VENTING	All appliances vented	Partial venting only	No appliances vented

These standards are copyrighted by American Artisan, 6 North Michigan Ave., Chicago 2, Illinois and may not be reproduced in part or in full without permission.

	GOOD	FAIR	POOR
AIR FILTERING OR CLEANING	Clean or filtered		No provision for cleaning or filtering
INSULATION OF DUCTS (based on temperature rise)	Basements and unvented crawl spaces For basements and unvented crawl spaces which are normally damp or those which are not tight so that infiltration will be high, 1/2 to 1 in. of insulation should be used, primarily to control condensation. A vapor barrier on the exterior of the insulation is a must.		
	Crawl space, vented		
	1 in.	1/2 in.	None
	2 in.	Attic space 1 in.	None
SUN SHADING OF GLASS AREAS	Outside venetian blind; ventilated canvas or metal awning; outside solar screen	Inside light-colored venetian blind with maximum slat opening set for 45 deg	Inside roller shade or lace curtains
*Stable humidity does not mean a constant level but is interpreted as either a steady rise or a steady decline with small variations during short periods (one hour).			

THIS CARD HAS BEEN DESIGNED by American Artisan to help in selecting a central residential summer air conditioning system which will provide maximum comfort. The purchaser should use the "Good" classification as a guide in selecting a dealer-contractor to make the installation.

These standards are based on data developed from research at the University of Illinois in cooperation with the National Warm Air Heating and Air Conditioning Association, and from performance reports based on field research at the Austin (Texas) Air Conditioned Village project sponsored jointly by the National Warm Air Heating and Air Conditioning Association and the National Association of Home Builders.

Quality and performance of air conditioning systems are usually related to their cost. Elimination of or skimping on essential ingredients can produce high operating costs and an unsatisfactory environment. Such conditions are outlined under the "Poor" classification and should be avoided by selecting a proposal that has been engineered to provide all essential components. This skill and service usually costs more but the extra cost is usually well invested.

Before signing a contract, a homeowner should ask for a clear explanation of what is covered during the guarantee period of the equipment, when it ends and what arrangements are available for prompt and efficient service both during and after the guarantee period.

cooling standards continued...

tem is expected to do, he is also building the prospect's ability to accept discussions on the points brought out on the *Standards* card.

Some additional sales points can be injected into a sales presentation. They can be used when it appears necessary to bolster the prospect's confidence in his ability to understand the essential factors involved in the selection of a cooling system that provides constantly controlled temperature.

It can be shown that, by reducing expansion and contraction of the building's construction members, the number of cracks which appear in plastered walls lessen, the annoyance of sticky doors is removed, and, in addition, the cost for screens is eliminated, the value of the house increases.

Additional Sales Points

Other points that impress prospects (particularly women) are the reduction in home maintenance costs, such as decorating walls and ceilings, the cleaning of drapes, furniture, carpets, and other furnishings, because of continued use of clean air with humidity control.

A well-prepared presentation becomes a creative selling job because it is designed to build a need for summer air conditioning, and to quickly identify the prospect's strongest buying motive.

Sales presentations that open along these lines tend to indicate the prospect's major interest and the path along which the salesman should develop his sales approach and method of closing the sale.

A skilled salesman will generally take notes as he talks with the prospect and, as his presentation



ENGINEERING procedures are based on the "Good" specification listed on the *Standards* card, as explained to prospect by Herb Tanis, Ridgeway Heating and Air Conditioning Service, Lansing, Ill.

progresses, he utilizes the notes to emphasize points which appeal to the prospect or points in which the prospect has indicated a lack of understanding.

Presentations that vary in tempo tend to keep the prospect's interest high, and also aid in educating him in the factors involved in making his purchase.

Let Prospects Study Card

Salesmen who have used the *Standards* cards repeatedly in their sales presentations, report that it's a good practice to give the prospect time to study the card in order to evaluate its help to him as a purchaser.

By asking permission to examine structural features of the building (or plans and specifica-

tions of a new house), the salesman will allow time for the prospect to examine the card. Additional time can be provided while calculations are being made, or while the salesman examines the available basement space for locating equipment and to determine the availability of utilities, floor drains, etc.

Providing time in this manner has a twofold advantage — 1) It helps to confirm the prospect's confidence in a company that isn't afraid to tell him what is needed to do the job right; and 2) If the prospect does not place the order at once, but is going to accept bids from other air conditioning installers, he will force their bids to be competitive by recognizing what to expect from the system he intends to buy.



PRACTICAL SOLUTIONS TO AIR CONDITIONING PROBLEMS

By S. W. Reid
Air Conditioning Engineer
Gilbert Associates, Inc.

What Is Noise?

**The answer is an elusive one because it must be based
on the sound environment of the equipment location**

IN A RECENT survey of air conditioning dealer-contractors and wholesalers, the editors of American Artisan found that in many areas the awareness of outside noise as a factor in air conditioning sales is growing. Noise associated with an air conditioning system inside a structure has, of course, been a problem since the early days of the art. Outside noise, however, has not, until recently, been recognized as serious. Unfortunately, the lack of attention to this problem by the industry has led either to restrictive legislation or, at least, to attempts in obtaining it.

The outside noise problem has developed as the result of widespread use of outside condensing units, air cooled condensers, and cooling towers in residential neighborhoods. The problem did not ex-

ist in the early days when community water was used in water-cooled condensers, nor did it amount to much in commercial and industrial neighborhoods — where the background noise level was high enough to mask the noise of equipment in the daytime, and where cooling systems did not normally operate at night.

Basis for Early Complaints

Early signs of trouble with cooling equipment noise in residential sections were discernable when complaints were filed on the basis of window unit operation. The offended party suffered not only from the noise of his neighbor's machine a few feet away from his open bedroom window, but also, perhaps, from the thought that the neighbor could sleep in cool com-

fort while he was tormented by the heat.

Authorities were puzzled as to how such cases were to be judged, since sounds do not disturb all people to the same degree. As a consequence, if there was any room for doubt, a complainer of noise was able to obtain little, if any, relief, and he was generally looked upon as a "crank."

In one case, a judge told the complaining party that the noise of a window unit air conditioner was part of modern urban living, just as are the noises of traffic, children playing, or dogs barking. If he could not accept this as a part of his way of life, he should move to a more quiet location.

As pointed out in the report on the noise survey, which appeared in American Artisan last month, the cooling equipment noise prob-

What Is 'Air Conditioning'?

True air conditioning provides comfort in all seasons, according to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers. ASHRAE defines air conditioning as:

"Air conditioning is the process of treating air so as to control simultaneously its temperature, humidity, cleanliness and distribution to meet the requirements of the conditioned space."

lem can no longer be ignored. Compared with only 12,000 residential air conditioning installations in the country in 1952, over 225,000 installations were made last year. About 90 percent of these incorporated outside condensing equipment.

To be enforceable, and eliminate as much as possible the matter of human judgment as to what constitutes an objectionable noise, noise control ordinances will probably state specific levels of sound pressure at different frequencies which are not to be exceeded. These can be measured by instrument at prescribed locations with reference to the disturbing sound.

Measuring Sound Pressure

Table 1 shows a schedule of sound pressure which has appeared in one proposed ordinance. Sound levels are to be measured with a sound level meter and associated octave band analyzer, manufactured according to standards prescribed by the American Standards Association, Inc.

In order to understand Table 1, let us briefly review some of the terms associated with sound and sound measurement. Sound energy flow does not differ greatly in principle from the flow of heat energy. Just as there are many sources of heat energy such as the sun, lights, people, appliances, etc., so are there many sources of sound energy such as fans, compressors, people, traffic, etc. Just as we keep people comfortable by

limiting the amount of heat energy which reaches them, so, also, we must try to keep them comfortable by limiting the amount of sound energy which reaches them.

The comfort criterion, with respect to heat, is called temperature. The acoustical criterion, with respect to sound, is called sound pressure. Sound pressure, like any other type pressure, is a force per unit area. Water pressure, for example, is expressed in pounds per square inch. Sound pressure is expressed, commonly, as dynes per square centimeter. (A dyne is 1/980 of a gram force.)

The ear is essentially a pressure operated device. The lightest pressure to which it will respond has been established as about 0.0002 dynes per square centimeter. This has been established as a reference point from which to measure sound. For an idea as to how small this pressure is, consider the fact that one dyne per sq cm is approximately one millionth of an atmosphere (which, in turn, is 14.7 lbs per sq in.).

Figuring Sound Variance

Sound pressures varying from the threshold of audibility up to those so loud they cause pain, could be expressed as dynes per sq cm. For reasons we shall not go into here, it has been found more convenient to express the relationship of one sound to another as the logarithm of the ratio of the two sound pressures.

In other words, instead of say-

ing, for example, that a sound pressure of 0.02 dynes per sq cm is 100 times as loud as the reference pressure of 0.0002 dynes per sq cm, we say that the reference pressure is a sound of 0 decibels, and the higher pressure is a sound of $20 \log_{10} [0.02/0.0002] = 40$ decibels. The term decibel has no dimension — it represents only a ratio.

Sound pressure alone does not determine whether a sound is objectionable or not. The human ear can tolerate more pressure if the sound has a high pitch than if it has a lower pitch. Since pitch is related to the vibrating frequency of the disturbing force which generates the sound, we must know something about how tolerable sound pressure is related to frequency. Although the human ear can detect sounds in the frequency range between 20 and 20,000 cycles per second, it is not practical to consider each frequency separately.

Bands Form Sound Spectrum

For convenience, the sound spectrum is divided into groups of frequencies called bands. Notice in Table 1 that there are 8 bands, the second through seventh of which have an upper frequency which is twice the lower one of that band. These are known as octave bands. Since frequencies above 10,000 cycles per second are seldom encountered in noise control work, analyzers are usually built to this limit.



Solving Problems continued . . .

Reference again to Table 1 shows how one community has related acceptable sound pressure levels to the various frequencies. The tolerable decibel level of outside source sound pressure varies from 52 in the highest band up to 76 in the lowest. This shows the need for sound analyzing equipment which can provide decibel measurements in each band.

Noise Bath Submerges Us

The commonly used A-scale or 40 db network sound level meter does not give such a breakdown and, therefore, is not much help in finding either the specific source of noise or the most efficient attenuation. It does, however, provide an overall measurement of a sound source and, to a degree, provides useful information for making comparisons of similar types of sound.

One writer has expressively described us as being submerged in a noise bath which becomes louder and louder as we increase the size, power, and number of mechanical devices that surround us. Although this statement contains a good deal of truth, it is certainly within our power to call a halt to such a trend.

Before this can be done, however, we must become aware of the problem. Generally it creeps up upon us so gradually that we are slow in recognizing it. The

Sound Pressure Levels Suggested for

noise problem might be compared with the smoke problem. In a number of our larger industrial areas very effective solutions were found.

Must Accept Some Noise

The problem of outside noise in connection with residential air conditioning equipment must be shared by both the equipment manufacturer and the installing dealer-contractor. A highly competitive market forces the manufacturer to build only to an average acceptable noise standard. He balances this standard with other standards such as capacity, reliability, serviceability, life expectancy, etc., to produce the sales volume he needs. While he recognizes that his product may fall short of some buyer's needs in certain of his standards, noise being an example, he, nevertheless, finds that his product has sufficient overall acceptance to satisfy him.

In other words, a product may not meet one buyer's noise requirement, another buyer's serviceability requirement, or, perhaps, a third buyer's life expectancy requirement. However, as long as it meets enough of the requirements of enough buyers to satisfy the manufacturer, he will build it. When he finds that he can no longer fulfill the specifications of a sufficient number of his customers, he will modify or redesign the product. Such is the rule in the manufacture of mass-produced equipment. It can never be all things to all people.

The air conditioning dealer-contractor's share of the noise problem follows from the discussion above. He must recognize that the outside air cooled condensing unit, the air cooled condenser, or the cooling tower is a mass-produced item that will not necessarily fit his every need. It is, therefore, up to him to make such modification in application as will permit the product to be used in spite of its apparent limitations. Of course, if he finds that a particular product should be modified basically, because it is not generally suitable for its intended use, he should certainly take his case to the manufacturer.

Just what should the air conditioning dealer-contractor do about the outside noise problem to help himself? First of all, he should take the lead in the area he serves by being aware of this problem. He should consider noise as an important factor in each job he sells, and should carefully study the possibilities and consequences of noise being generated by any outside-located equipment. Second, he should acquaint himself with methods of reducing noise and vibration to acceptable levels, should this appear or become necessary for a given installation.

Weigh Noise Patterns

In studying each application for the possibility and consequence of noise, the dealer-contractor should note the 24-hour noise pattern of the area. Even if the equipment to be installed has a relatively high

Summer Air Conditioning Units

noise level, it may not constitute a nuisance if the background noise level of the area is high. For example, a motel located on a busy highway might easily accept a fairly noisy tower that could not possibly be used in a suburban neighborhood.

Similarly, a fairly noisy outdoor condensing unit might be used without complaint of noise in a housing development having a high daytime noise level, provided the owner intended to turn it off each evening by 10:00 p.m. when things quieted down. In a quiet, first class suburban development, noisy equipment might be ruled out under any circumstances.

In addition to trying to anticipate the noise tolerance for each application, the dealer-contractor should know what precautions should be taken to guard against noise, and what additional measures he can take to reduce the noise level of installations which prove to be above a tolerable noise level. For instance, he might follow a rule observed in one community which says air conditioning equipment may not be located in a side yard unless there is at least 10 percent of the lot width between the unit and the property line.

Deflecting Hoods Used

If this does not solve the problem, he might consider designing special deflecting and sound absorbing hoods or baffle arrangements to keep noise and hot air away from adjacent property. One dealer responding in the Artisan survey reported that such a deflecting arrangement had been

TABLE 1 — MAXIMUM permissible sound pressure levels at specified points of measurement for noise radiated continuously from premises during the hours from 11:00 p.m. to 7:00 a.m.

Frequency Band, Cycles per Second	Sound Pressure Level, Decibels Re 0.0002 microbar	
	Inside Table	Outside Table
20-75	66	76
75-150	59	69
150-300	52	64
300-600	46	59
600-1200	42	57
1200-2400	40	55
2400-4800	38	53
4800-10,000	37	52

When the source of complaint originates within a building or structure, the microphone shall be placed three feet (3 ft) from the nearest window in the room where the source of complaint originates, and not less than three feet (3 ft) above the floor, where the inside table of sound pressure levels shall be used.

When the source of complaint originates outside, the microphone shall be placed at the source of complaint but no closer than three feet (3 ft) to any wall and not less than three feet (3 ft) above the ground, when the outside table of sound pressure levels shall be used.

No person shall, within the city, create any noise, radiated continuously from any premises which produce a sound pressure level in any octave band of frequency in excess of the sound pressure levels as set forth between the hours of 11:00 p.m. and 7:00 a.m. as measured at the source of complaint.

worked out in conference with his city authorities.

This same dealer also pointed to a trend in his area toward installing the complete packaged unit above the eave line so that offending noise and hot air would be dissipated into the atmosphere at a point where they were least objectionable.

There are, of course, the usual precautions that should be taken, such as making allowance for flexibility in piping and duct hookups, providing proper mountings and fastenings for equipment, and

making sure equipment is properly installed and adjusted to operate as intended by its manufacturer.

Beyond these steps, the dealer-contractor must devise such sound absorbing enclosures for condensing units or sound absorbing plenums for towers and air cooled condensers as may be necessary to bring the sound level down to the specific needs of the job. Unfortunately, the trend toward lower cost through reduction in size and increase in speed has not resulted in quieter equipment.

Where Will Future Energy for Heating and Air Conditioning Come From?

New Developments Committee of NWAHACA examines various potential sources, and reports advances in the continuing effort to produce economical energy

NATURAL ENERGY sources, the sun, tides, waterfalls, and fissionable materials, will all play an important role in the future as a means of supplementing current methods of producing energy from gas, oil and coal for industry and the home.

This paper will serve to acquaint the reader with some of the methods that may be used.

One source of energy is electricity which can be produced by: 1) combustion of fossil fuels, conversion to steam, then by a mechanical device (pistons or turbine) which turns a dynamo; 2) water falls to a mechanical device (turbine) which turns a dynamo; 3) chemical reaction as in a battery.

Fossil fuel power plants produce the greatest amount of electrical energy used today. The most modern of these plants have a 40 percent maximum efficiency.

Hydropower is more efficient, but insufficient potential capacity and restricted locations are limiting factors.

The battery is the only means of directly producing electrical energy without intermediate loss through a mechanical conversion

device. Present batteries must be replaced at short intervals or recharged frequently.

Energy generators convert heat,

light, and/or chemical reactions directly to electricity, thus saving the inefficiency of the intermediate mechanical device. All current principles being employed were discovered in the 19th century.

THIS ARTICLE is the third of four reports made by the New Developments Committee of the National Warm Air Heating and Air Conditioning Association to acquaint the members of NWAHACA's Research Advisory Council with problems that now face or will face the industry in the not too distant future.

In this article the committee reports on the need for new energy sources and where there is research being conducted to improve efficiency of existing equipment for the production of energy for the future. Members of the New Developments Committee are: M. E. Ralston, The Williamson Co., chairman; Al Galaba, Morrison Products, Inc.; and W. L. Riehl, International Heater Co.

Direct Converters

Energy generators are presently economical and are indispensable to space research and modern warfare. They are also light, compact, noiseless, and can remain idle for years without deterioration. Commercial applications are promising, though remote at this time. They may, however, eventually revolutionize the generation and distribution of electrical power. Many of the scientists in government and industry are feverishly pursuing breakthroughs in the development of these generators.

Practically all prospective energy generators operate most efficiently at extremely high temperatures. The development of satisfactory materials that will withstand constant temperatures of from 2000 to 5000 F is the greatest barrier faced by those working to develop these devices.



THERMO-ELECTRIC MATERIALS are being examined as possible sources of future energy

Another source of energy is the sun. This energy is all around us, is free for the taking, and is available in large quantities. The solar energy falling on the continental United States is about 1500 times our present total energy consumption. Most importantly, there is no limit to its supply.

Need Huge Collector Areas

The problem of solar energy is quantitative in nature. A one square foot surface collector at a low altitude on a sunny day can produce only 75 watts. Therefore,

huge collector areas must be considered, and the cost is high. The second major problem involves the storage of this energy for use at night, on cloudy days, or over a period of days.

Solar engines have been developed, utilizing the heat collected and concentrated by lenses and mirrors. This heat source has practical possibilities and is being developed. Generation of electricity is possible by converting heat or light directly into electricity through chemical reaction or otherwise. Efficiencies of 14 percent have been realized in con-

version of light radiation to electricity.

Nuclear Energy Researched

There are increasingly voluminous reports from research on nuclear energy and its potential commercial uses. Due to intense heat, dangerous radiation, and the many unknown facets resulting from fission and fusion of atoms, science has not yet been able to harness this energy for efficient, practical, and economical use. At present it appears that research is near the answer to this problem.

continued . . .

Research Seeks New Energy Sources

Nuclear heat can be converted directly into electricity through the Cesium Diode Method, where the true potential of atomic energy comes close to realization with the use of plasma (ionized gas) in combination with a nuclear reactor. The heat of the fissionable material can then be converted directly to electricity, in a system requiring no moving parts.

Progress reports indicate that major breakthroughs in low cost electric generation, by means of nuclear energy, can be expected in the not too distant future.

Fuel Cell Potential Source

Another potential source of energy — the fuel cell — resembles a permanently charged storage battery. It must be supplied with basic chemicals. When the chemicals in the fuel cell react, free electrons are released and can be made to circulate in an electric circuit. This battery-like device has two electrodes immersed in an electrolyte and a liquid capable of conducting an electrical current. When a gas that will react or oxidize is fed to one electrode and oxygen to the other, a chemical reaction takes place through the electrolyte.

The fuel cell has a theoretical efficiency of 100 percent and is believed to have a practical effi-

ciency of 75 percent. Fork lift trucks, tractors, lights and portable radar sets have been operated by fuel cells.

May Use Thermionic Tube

The thermionic tube — another potential energy source — resembles a radio tube that operates at extremely high temperatures. From experiments it has been proven that when a metal is heated to extremely high temperatures in a controlled atmosphere such as a sealed tube, electrons flow from the hot metal to an electrode which picks up these electrical charges. The gas or vacuum in the tube must be such that when a metal plate is heated, it becomes what is known as a plasma, which permits the flow of electrons through it with little or no resistance.



CAMERAS ARE USED to study flame characteristics that may lead to the use of exhaust gases from magneto-hydrodynamic generation to provide a new energy source

Magnetohydrodynamic generators, also known as MHD generators, operate with a blast of hot gas, like the roaring exhaust of a rocket. This gas has the ability to conduct electricity and is called a plasma because it assists the flow of electrons between the poles of powerful magnets. This ionized gas in a MHD generator serves the same purpose as do the copper wires of rotating coils (armature) in a modern electric generator.

The high temperature gases flowing from the MHD at 5000 F pass down a ceramic lined tube at 1800 mph, cut across a powerful magnetic field, and, in so doing, emit an electrical current. Large MHD generators are expected to be 50 to 60 percent efficient.

Photographs to illustrate this article were provided by Minneapolis-Honeywell Regulator Co., and Carrier Corp.

AMERICAN

ARTISAN

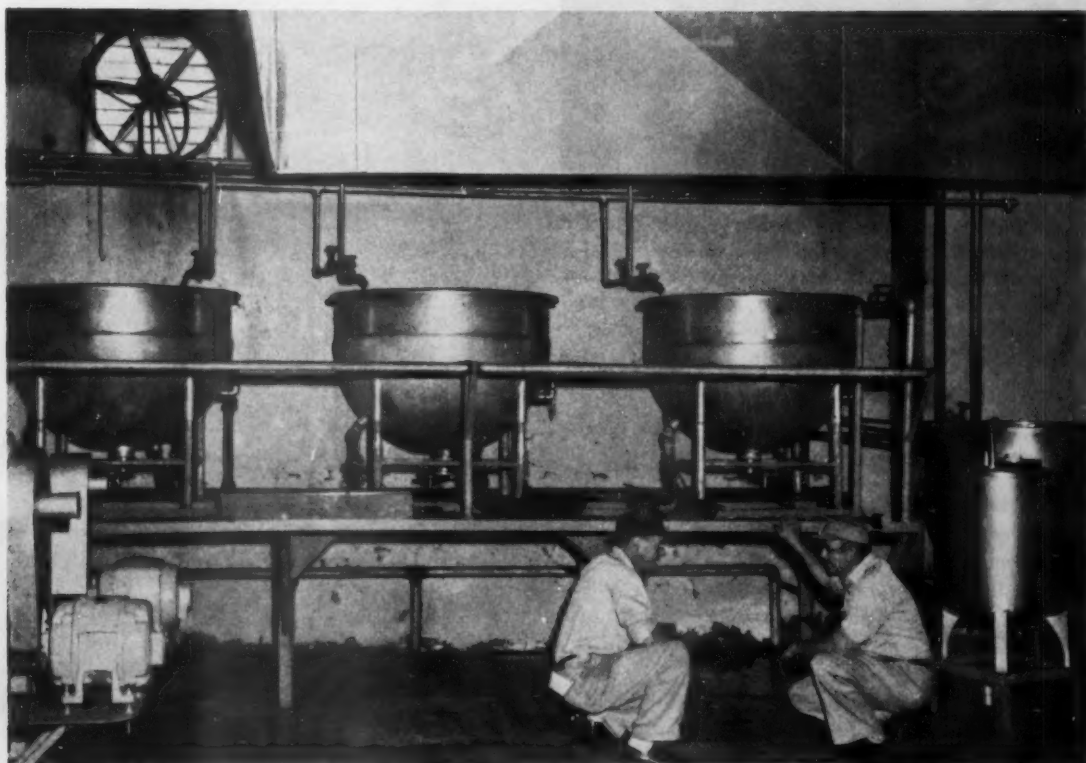
Sheet Metal Section

Ventilation

Dust Removal

Architectural

Specialties

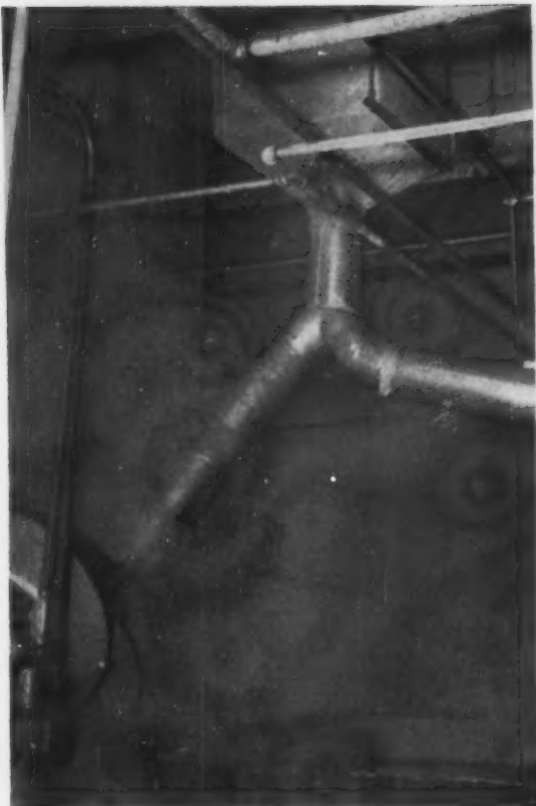


ORIGINAL WORK, exhaust hoods over steam kettles, leads to more kitchen work . . . P 62

Solving Sheet Metal Problems in a Canning Plant Page 62

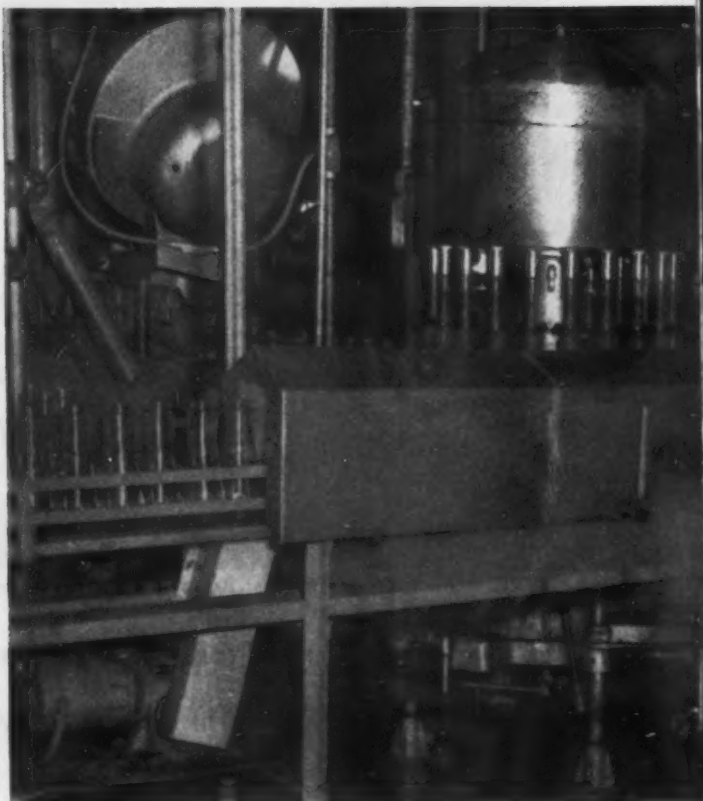
Use Metal Wall Panels to Build Bulk Milk Unloading Room Page 66

New Uses for Sheet Copper Page 70



HEAVY MOISTURE released in cannery requires high capacity exhaust system to clear areas under observation by machine operators

How to Solve Sheet Metal



VENTILATED sheet metal hood contains steam at point of origin, providing effective control and safety for the machine operator

Problems in a Canning Plant

Special diffusers to dry bottles for labeling, hoods to collect steam, and stainless steel wall panels for sanitation are all part of the overall job handled by this sheet metal contractor



"PEOPLE WHO OPERATE and manage food processing plants have a multitude of production problems on their hands, and they are usually willing to turn many of these problems over to skilled contractors who can solve them with a minimum of interruption to processing schedules.

"The type of work required is often a challenge to the sheet metal contractor who enjoys designing, fabricating, and installing pieces of equipment that are seldom required a second time," says F. V. Pils, F. V. Pils, Inc., Lockport, N. Y.

One such only-one-of-its-kind piece of equipment, and in this case it happened to be two pieces, was a diffuser for cooling glass bottles used in a tomato cocktail cannery. The problem, as explained to F. V. Pils by the plant engineer, was the difficulty in attaching gummed identification labels to bottles after they had moved from the pasteurization, filling, and

capping machines, and through a hot water rinse before entering the packing areas. The problem developed as a result of insufficient drying of the rinsed bottles before they reached the labeling equipment.

Diffuser Uses Outside Air

The solution to this problem was achieved by designing and fabricating a slot-type diffuser that covered the entire width of the cooling conveyor. A large amount of outside air was required for this operation due to the speed at which the freshly rinsed bottles passed any certain point between the rinsing operation and the conveyor to the labeling equipment.

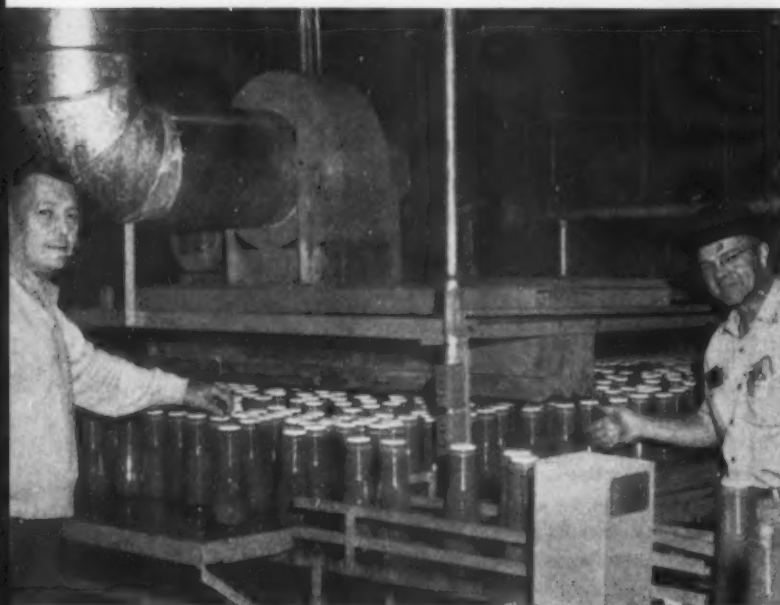
Space also limited the area directly beneath the air discharge point. Therefore, to use outside air as a cooling and drying medium, it was necessary to discharge a large quantity of air at high velocity both downward and at an

continued . . .

Sheet Metal Plays Vital Role in Canning Plants



DESIGN FOR special diffuser is worked out from handmade cross section sample by F. Van Pils (left) and Philip Muck. Limited area, large air volume and wide air pattern presented a combination of fabrication problems



INSTALLED DIFFUSER is checked for performance by cannery manager (left) after installation. It dries and cools glass bottles for labeling

angle that would keep the hot rinsed bottles in its path long enough to complete the drying of the glass where the labels were to be attached.

With this information, Mr. Pils and his partner, Philip Muck, discussed the design of an outside air system that would provide the quantity of air needed and an air pattern shape to cover the entire area available for the cooling and drying operation.

Vary Blade Angle

A pattern for such a diffuser was fabricated of light gage metal. The design called for a variety of damper blade angles, the first would discharge air straight down at the point where the bottles left the rinsing operation. The second damper blade slanted air in the direction of the bottle movement.

The third and fourth damper blades gradually increased the air discharge angle, permitting the air to follow the bottles as they moved along the conveyor toward their discharge point. This meant that each diffuser vane was fastened at a different angle.

Several prototype diffusers were made and the air discharge pattern checked before fabrication of the heavy gage permanent diffuser was started. Once the permanent positions had been determined, the next step was to prepare a detailed drawing showing a cut-away of the diffuser, ductwork, blower, and outside air intake. These drawings were made to scale and presented to the cannery management for approval.

A blower operating at 3600 rpm and at 6 in. static pressure was selected to provide 2500 cfm through a 12 in. deep and 5 ft

long 'diffuser. 18 ga galvanized metal was used for the diffuser shell and the 14 in. diameter duct system. The blower was located adjacent to the diffuser.

Separate Vanes Spread Air

A 16 ga baffle was placed across the throat of the diffuser to spread the air evenly throughout its 5 ft length. The diffuser contained four slots with the air volume to each being controlled by a separate vane to direct discharged air to the desired point. Support was given the diffuser by building it on a $\frac{1}{4}$ x 2 x 2 in. angle iron frame.

The cannery used two bottling and rinsing conveyor lines. A cooling and drying system was installed on each. When each system had been installed and put into operation, it was found that performance was as expected in that it met the requirements set by the plant operators.

Solving Moisture Problems

Canning plants have many other problems that sheet metal contractors can help management solve. Most of these problems are due to excess quantity of moisture brought about by the cooking and sterilization processes. The use of stainless steel and aluminum for this purpose has been found most helpful in maintaining the sanitary condition desired.

Some of the other work performed by the F. V. Pils Co. include: stainless steel hoods located over cooking kettles; stainless steel wall panels covering what was once painted areas in the processing rooms; exhaust ventilation systems; produce hoppers and conveyors.

A recent order received called for the paneling of the four walls

of a steam kettle cooking room. This order was placed because of the outgrowth of a similar job completed in a smaller room in which moisture content had made it practically impossible to maintain paint on the masonry walls. When it was found that stainless steel panels covering the walls of the smaller room provided the sanitary condition desired, an order was placed for duplication in the larger kitchen.

Easy to Clean Wall Panels

Panels used for the wall area were fabricated from 26 ga type 402 stainless. These panels were crossbraked to provide an attractive design and to add rigidity. They were held to the masonry wall by standard type clips fastened to the wall, over which the panels were inserted and snapped into place. Panels were joined to one another by a slip seam to provide a continuous cover for the masonry wall.

Walls so covered not only eliminate some of the maintenance problems faced by cannery managers, but also provide a more sanitary environment for processing work, while having the advantages of an attractive decor.

Other Applications

There are many applications for the use of galvanized sheet metal in cannery operations, some of which are produce chutes, washing apparatus, and collecting hoppers. Most products delivered to a cannery are dumped from farm trucks directly into troughs filled with water. The water moves at such a velocity as to cause the products to bump together and wash away surface dirt. Dirty water is released at the end of the trough.

Produce moves from the wash-

ing chute into sloping dry chutes where it is delivered to a controlled washing machine. Here the produce is fed onto a fabric conveyor belt and passed through a series of sprays containing cleansing agents in the first few banks of sprays, and clear water in the later spray stages. From this point, the produce is delivered to the sorting conveyor where employees remove the overripe or damaged.

The produce then moves along the fabric conveyor belt to a metal hopper, at which point begins the processing for its particular purpose. In the case of tomatoes, some may be used for tomato juice, tomato cocktail, catchup, or stewed tomatoes. After the sorting operation, produce is no longer exposed to the atmosphere or touched by human hands.

Install Produce Washer

The fabrication of a produce washing and rinsing machine was another of the jobs assigned to the F. V. Pils Co. Mr. Pils selected the location for the various spray banks, and, over these sprays, installed an angle iron frame to provide support for the piping and nozzle arrangements.

Over the angle iron frame he constructed a watertight hood of galvanized metal to prevent spray from being blown onto other machines operating in the vicinity. The hood also prevented the floor from becoming wet, thus removing one of the hazards to employees working in the area.

The hopper at the end of the fabric conveyor belt, used to feed the produce pulverizers, was also made from galvanized iron and built around a supporting angle iron frame. Joints in this hopper had to be watertight to prevent leakage of juices, due to the weight of produce filling the hopper.



Metal Panels Fulfill Sanitary Needs of Milk Unloading Room

**Frequent scrubbing with detergent and hot
water from high pressure hose
required sealed joints**

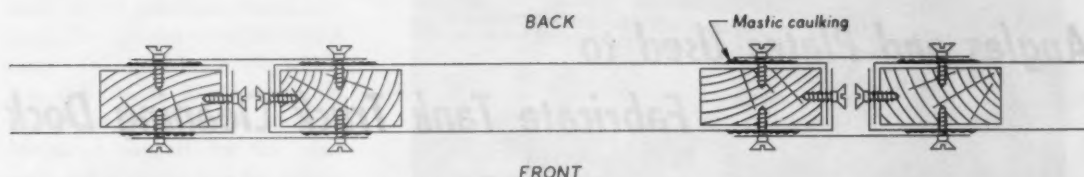
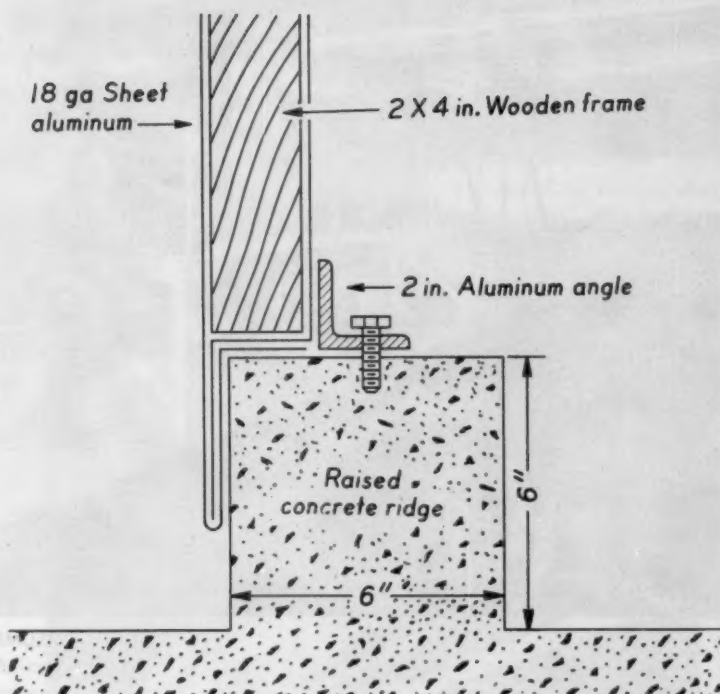
"NEW APPLICATIONS for sheet metal work often come from the most unexpected sources," says Frank Alder, Bison Blower Company, Buffalo, N.Y. "One example is a bulk milk receiving room we recently completed for a local dairy company. The job evolved from a conversation with the chief

plant engineer for whom we had just installed some stainless steel tanks. He told us about plans to create an indoor unloading room for transport trucks. His plan was to line the room with glazed tile so it could be washed daily. We suggested the use of metal panels as being the most sanitary, having

longer life and being more decorative.

"The suggestion of metal wall panels offered a solution to a problem that the chief engineer had not mentioned; he was planning a 3½ ft platform for workmen to use in attaching pumping equipment to valves located atop the

BOTTOM EDGE OF METAL sheathed panels were fastened to a raised concrete ridge containing an aluminum angle. The panel was attached to the angle with wood screws set at 12 in. intervals



PANEL FASTENING TECHNIQUE used wood screws to hold front and back metal pans to wood frame. Panel joints were sealed with flat metal band stock, using a mastic caulking compound around its edges and over the screw penetrations

trucks' tanks, and for washing trucks before sending them on their return trip.

Initial Plan Prepared

"As a result of our conversation, he commissioned us to prepare a detail of the panel construction we would use, and to include a proposal for the metal platform fabrication and erection."

In determining the type of panel

construction most suited to the job, Mr. Adler had to keep in mind that the unloading area was to be formed from existing open space within the building, and that no existing masonry, wooden walls, or supporting columns were available for attaching the proposed metal panels. The bulk receiving room was to be 50 ft long and 30 ft wide.

Panel design was based on the chief engineer's willingness to

provide a concrete base for attaching the panels at the lower level. This base could be poured at the same time as the unloading room's concrete floor. The distance between the new concrete floor and the ceiling was kept at a uniform 13 ft, making it possible for Bison Blower Co. to design its panels around one specification for height and width.

It was decided to fabricate the panels from 18 ga aluminum



ALUMINUM PANELS and platform provide a sanitary and decorative receiving room for bulk milk delivery to dairy plant

continued . . .

Angles and Plates Used to Fabricate Tank Truck Cleaning Dock

sheets, 36 x 120 in. These sheets were to be formed into panels that would cover both sides of a wooden frame. The 36 in. wide sheet was notched at each corner and given a 2 in., 90 deg bend. A horizontal seam was necessary to extend the 10 ft sheets to the 13 ft height.

Pans Required Rigid Frame

The wooden panel frame was fabricated from 2 x 4 in. studs, 13 ft long. Five crossbraces, one at each end and three equally spaced between the two end pieces, provided the internal support. These

crossbraces were held in place by using heavy-duty corrugated staples.

This type of construction provided a rigid frame for attaching the aluminum pan. A duplicate pan, slightly larger (to allow for the metal thickness of the first pan's flanges), was fabricated and installed on the opposite side. These overlapping pans were held in place by wood screws fastened through the aluminum to the wooden frame. Screws were spaced on 12 in. centers.

The front pan was fabricated differently than the back pan in that the top and bottom contained

a 4 in. double thick lip that served as part of the covering for those points at which the panels were attached to the ceiling and floor supports.

Concrete Supports Bottom

The panels were held in place at the bottom by a 6 x 6 in. concrete raised ridge, poured at the time the concrete floor was laid. The upper portion of the panels were attached to structural members fastened between high ceiling beams. Each panel was set into place and then securely fastened to 2 in. aluminum angles attached

to the concrete floor and to structural steel members at the ceiling.

When a panel had been put into place, it was heavily caulked with mastic compound, and then securely held in position by the use of aluminum screws set through punched holes in the 2 in. aluminum angle. The panels were set side by side and as close as was practical.

After all panels had been placed into position and fastened on the back side to the 2 in. aluminum angle, the vertical joints were covered with a 4 in. wide flat aluminum band which was heavily caulked on each side where it came in contact with each panel. The 4 x 1/8 in. flat band stock was held into position by aluminum screws placed on 12 in. centers.

Panels Resist Moisture

Panels were designed to withstand heavy moisture concentration, since water used for washing the walls and mobile tank trucks is delivered at approximately 200 F and under 30 lb pressure.

In fabricating the raised platform, an all aluminum frame was used. The uprights were fabricated from 4 in. aluminum angle, which was attached to 6 in. aluminum channel at the top to provide both horizontal support for the platform and a sturdy base for attaching 1/4 in. floor plates and vertical pipe supports for a guard chain. The guard chain is used primarily to prevent workmen from backing off the platform while performing their work.

Two inch rigid aluminum tubing was used for the uprights to support the aluminum guard chain. Hand rails for the five step stairway were fabricated from 2 in. square aluminum tubing.

Sliding Door Favored

A sliding door, supported by overhead rails, was used as the passageway from the other sections of the building. This door

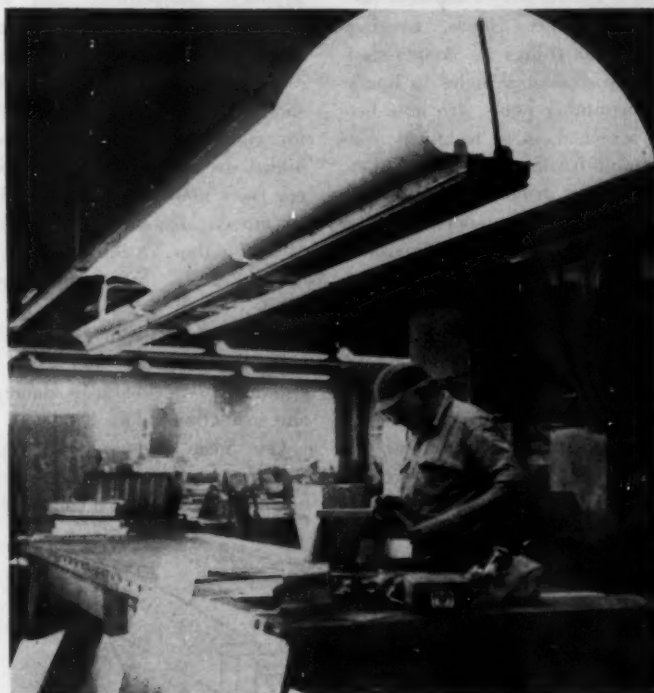
was fabricated in the same manner as the wall panels; that is, using a wooden frame covered with aluminum pans.

The door was hung in such a manner as to provide a tight fit between the receiving room and the remainder of the dairy plant. This was achieved by close tolerances between the points where the door made its final approach to the door frame. An aluminum

bracket, located near the bottom of the door frame, guided the door into its final tight position.

It was felt that this type of door would be more suitable than a conventional swing type because it would require a minimum of space when left open. Another advantage of the slide door was its self-closing feature, thus eliminating a mechanical door closer which would be needed for a swing door.

Inverted Reflector Removes Bench Glare



IF THE REFLECTION of overhead lighting has been causing eye-strain and discomfort for your pattern development journeyman, with the result that his effectiveness is reduced, try this idea from Wolff, Kubly and Hirsig, Madison, Wis.

A curved sheet aluminum reflector the same size as the bench (12 ft long by 4 ft wide) was hung from the ceiling directly above the bench. The half circle reflector was made rigid by use of angle iron along its edges and was fastened to the ceiling with standard galvanized duct hangers.

A three section, double lamp fluorescent lighting fixture was inverted in the center of the curved reflector, just high enough to permit the reflected light from the sides of the curved reflector to overlap any shadow that might form at the bench level.

The photograph and information used here were supplied by Mueller Climatrol.

New Uses for Sheet Copper

... thin sheets, bonded to
other materials indicate a new market
for sheet metal contractors

MORE THAN SIXTY ideas for new or improved copper building products are a result of a six-months' study of the construction field, made under the auspices of the Copper Products Development Association. These ideas, ranging from such things as copper-clad asbestos roofing shingles to liners for swimming pools, are now being screened as to technical and economic feasibility. The ones that appear most promising will be incorporated in the association's research and development program.

Expect Rising Market

The study, which involved extensive survey of the needs and preferences of architects, builders, building materials manufacturers, and others, suggests that a marked upsurge in the use of copper in

the building industry may be expected in the future. The degree of this increase in usage, however, will depend on how successful the copper industry is in making its products competitive, and how successful it is in solving certain technical problems.

Roofing, the study indicates, should be one of the big markets for copper in the future. Techniques are suggested to make copper roofs more competitive and to circumvent installation problems. Most of these techniques would use relatively thin copper sheet bonded to other materials, such as asbestos, plywood, or felt, to provide the needed thickness, resistance to mechanical damage, and insulation value.

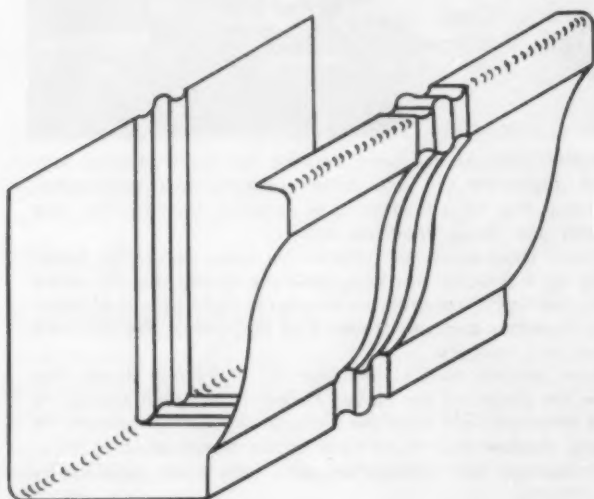
One idea contemplates copper roofing panels installed in a rubber matrix; another, a copper-clad

asbestos shingle; and a third, a copper foil roofing that would be rolled in place over a sprayed adhesive base.

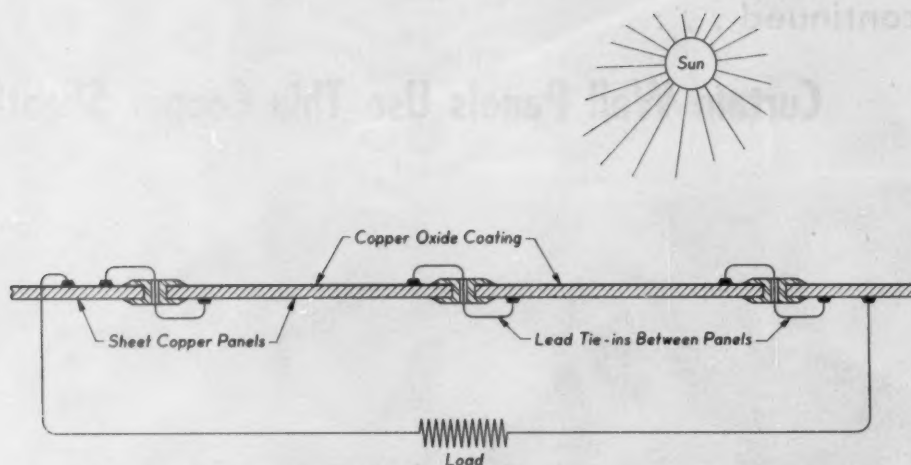
May Pre-apply Patina

Two main reasons are seen for a return to copper roofs in better class dwellings and office structures. One is the lasting quality of the roof, and another, the attractive quality of the blue-green copper patina. It is believed that thin copper sheet bonded to a stiffening material would provide roofs that would last a lifetime, and yet, would be within the economic reach of the homeowner.

If, in addition, such roofs could be provided with pre-applied patina and could be designed to give interesting shadow lines, they would meet the design needs of



POSSIBLE CONFIGURATION of an expansion joint that may make thin-gage copper gutters economical for use on residences



COPPER ROOF SECTION that has good possibilities for use as a solar energy collector that would generate electricity. Copper oxide coated panels would be connected in series to develop electrical requirements of building

many architects. A copper-clad asbestos shingle, delivered to the job with the patina factory-applied, is regarded as one of the most likely copper roofing materials for the home market. However, extensive development work would be needed to perfect such a product.

The results of the study also envision greater use of copper for gutters and downspouts. To get around the difference in price between copper and competitive materials, rolled thin-wall, high-strength copper-alloy gutters are proposed. It is pointed out that copper gutters and downspouts are presently made of soft copper, which requires excessive thickness of metal to give strength and rigidity. This tends to make the cost excessive and also creates difficulties in installation and maintenance, since soft copper bends readily.

Use of Alloy Reduces Cost

A high-strength copper alloy, no thicker than 0.020 in., the study concludes, might be the answer to the cost problem, and, at the same time, should simplify installation and give a more rigid system. To

avoid the buckling that might occur with thermal expansion and to make solder joints more durable, an accordion type expansion joint would be built into gutter sections. As an alternative, a single convolution might be used every few feet to absorb the effects of thermal expansion.

Copper foil is regarded as a forthcoming building material of much promise. It is suggested, in the report on the CPDA study, as a material for use as a moisture barrier under wood paneling in basements, as a wrapping for sections of joists, sills, and studs that are in contact with concrete, as a "moisture stop" under floor coverings in utility and bathroom, and for numerous flashing uses. Paper-backed copper foils could possibly be used as an "economy" flashing material for low-priced homes.

Increased markets for copper extrusions and paneling in the building industry will possibly depend more on how successful technologists are in solving the tarnishing problem than on anything else. It is believed that copper and copper-bearing alloys, such as brass and bronze, will be used

very extensively for curtain-wall panels and in window and door frames, once a satisfactory method has been developed to prevent oxidation.

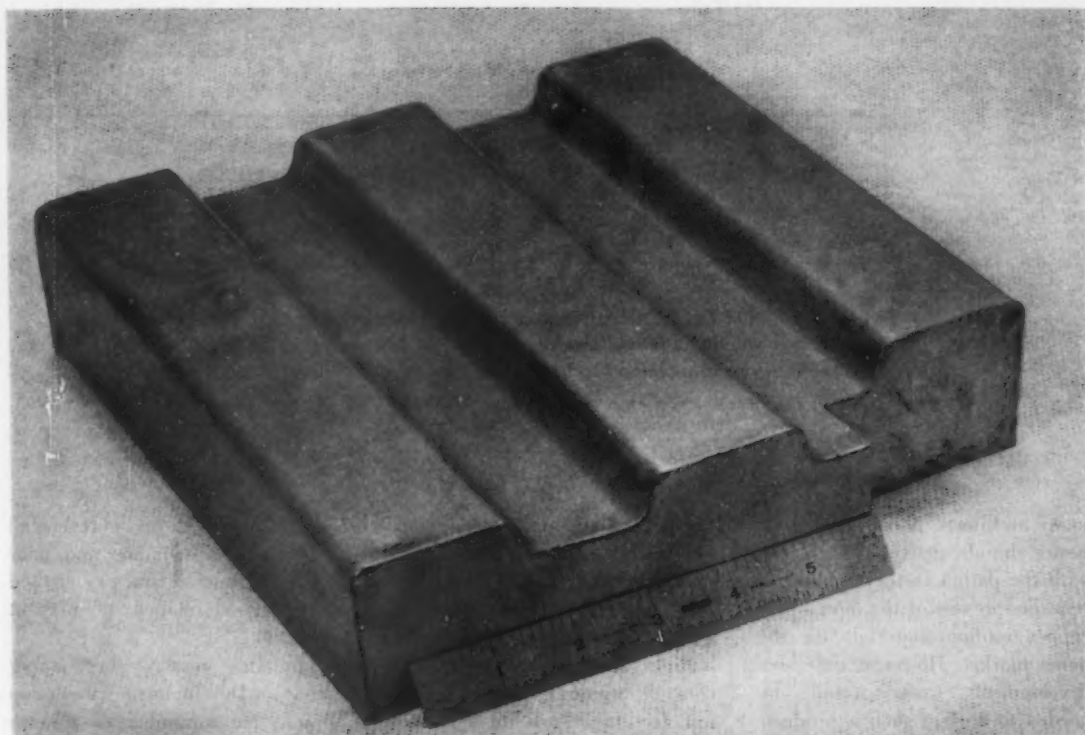
For this reason, the Copper Products Development Association already has a number of research projects in progress which are aimed at finding methods to preserve surface appearance and prevent tarnish. The CPDA believes that this technical problem, more so than cost, holds back the use of copper paneling and extruded shapes in office buildings and high-class homes.

Examples of Research Ideas

The study turned up many ideas that may be classified as unusual or exotic. For instance, it suggests the development of hollow copper-alloy beams for use as load-bearing and decorative members for open-beam ceilings. It points out that a properly designed hollow rectangular beam, made from a commercial bronze, could possibly be made to sell at approximately ten percent less than a redwood beam of the same strength. "With a better understanding of the

continued . . .

Curtain Wall Panels Use Thin Copper Sheathing



PROPOSED CURTAIN WALL panel made of thin, glass coated copper. Rigidized pattern of copper skin would provide surface strength. Interior of panel would use polyurethane foam backing and insulation

physical properties of copper-base metals," the report states, "designers could create a new concept in architectural decor."

May Use in Air Filters

In another idea, copper would be used in conjunction with another metal for air-filtering in existing air distribution systems. It is believed that a metallic filter could be designed to attract dust particles electrically, without external electric power. It is known that when two dissimilar metals

are held in close proximity to each other a voltage is developed. This phenomenon could possibly be employed to attract dust particles in air that is being circulated through a furnace or air conditioner.

Copper, because of its position in the galvanic series, would provide a good base metal for such an electrostatic filter. One of the advantages of such a filter is that it would not have to be replaced, but could be washed with water when required. The report cautions, however, that although such

a filtering device is theoretically feasible, physical development work would have to be done to prove its practical value.

Non-profit Organization

The Copper Products Development Association is a non-profit organization that conducts research aimed at the development and improvement of copper products. Its membership includes 31 companies, which produce more than ninety percent of the free world's copper.

the quality
tells . . .
the quality
sells . . .

JANITROL

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AIR-CONDITIONING

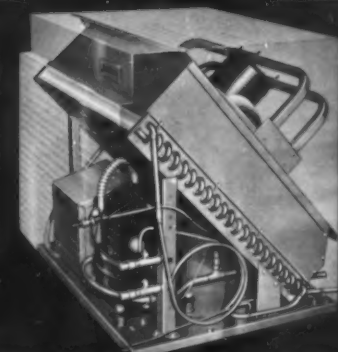


Hallmark of Quality
in Luxury Comfort

UNCHALLENGED COOLING PERFORMANCE...

in all-new **JANITROL**

52 SERIES CONDENSING UNITS



A COMPLETE LINE TO MEET ALL NEEDS...
CAPACITIES FROM 22,200 TO 110,200 BTU HR.

Outwardly beautiful and pleasing to the eye, inwardly rugged and powerful, new Janitrol 52 Series provides low-cost central cooling with matchless reliability and efficiency. Here are some of the many ways new Janitrol 52 Series condensing units are demonstrating their excellence...

In Performance... condensing coils have greater area to dissipate more heat and to provide higher efficiency. Operation with outside temperatures as high as 125°F.

In Styling... modern, simple and functional cabinet that will be in the best of taste in any landscape plan. Finished in beautiful, durable, weather-resistant, automotive-type enamel.

In Economy... powerful, top-mounted fan draws in quantities of cooler ground air over the condensing coil, which is shaded from the sun's heat by louvers.

In Quietness... compressor and fan are unusually quiet in operation. Cabinet is acoustically treated with a weatherproof, sound-absorbent material.

In Safety... upflow exhaust protects nearby plants from hot blasts... enclosing grilles safeguard pets and children.

In Service... all components are easily accessible. Service panels may be removed without affecting operation, to make checks while unit is in full operation.

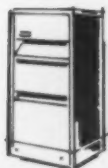


A.R.I. CERTIFIED

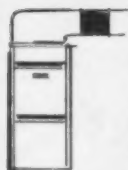
Full A.R.I. certification is your assurance this equipment meets or exceeds standards of the Air Conditioning and Refrigeration Institute. A five-year written warranty backs up your choice.

JANITROL AIR-COOLED SUMMER AND YEAR 'ROUND COMFORT SYSTEMS TO MEET ALL NEEDS

Janitrol Win-Sum-Matic Year 'Round Systems



A complete central heating and cooling unit in a compact, smartly-styled cabinet smaller than most home refrigerators! Features air-cooled summer cooling, thrifty gas heat with Dura-Tube heating heart, guaranteed for 20 years! Exclusive "Season Selector" control allows changing from heat to cool (or vice versa) in seconds. No special tools or service call needed.



Janitrol Add-On Cooling System

With Janitrol Add-On Cooling, most any forced air furnace can be easily adapted to circulate cool, filtered air to every room in the home. The Janitrol evaporator coil is installed in furnace outlet duct and connected to the properly-sized 52 Series condensing unit. The existing furnace blower and duct system circulates the cooled, dehumidified air. Here's full central air conditioning at low, low cost!



New Janitrol J-Line Self-Contained Air Conditioners

The Janitrol J-Line models are an economical answer to cooling needs. In one compact unit are the blower, compressor and evaporator coils. Operation is remarkably quiet. May be used with ducts or as free discharge. Installs through walls in crawl space, in attic or other limited access locations.

Janitrol Schoolroom Cooling and Heating

Janitrol offers a self-contained room heating and ventilating system (with optional cooling) that features perimeter-type, draftless air distribution. Installation economies are noteworthy (savings up to 60% over large central systems). For new schools, additions and modernization.

WRITE TODAY!

for complete information on Janitrol heating and cooling systems for your business needs. Remember—architects and engineers can specify... and dealers can recommend and install Janitrol equipment with complete confidence it will provide the finest, most carefree performance possible.

JANITROL

MR

HEATING AND AIR CONDITIONING

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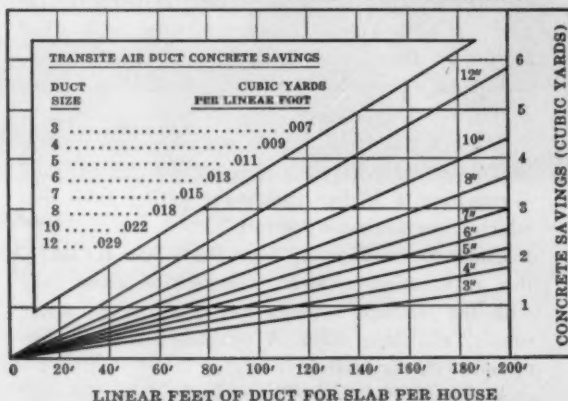


Save up to \$85 on the installed cost of slab-on-grade perimeter heating systems!

Slab perimeter heating is rapidly gaining the acceptance of builders throughout the country. They appreciate the value of this system which provides the double heating benefit of radiant and forced warm air. These same builders have made Transite® Air Ducts the standard in the industry. They have discovered that Transite helps make perimeter heating more profitable for them.

Because of its strong asbestos-cement structure, Transite *needs no concrete encasement*. This means substantial concrete savings (see chart). Further, Transite requires no anchoring because it cannot float. Its long, 10-foot lengths mean fewer joints and faster installation. What's more, fittings can be made right on the job. Being non-metallic, it's corrosion-resistant and odorless, too! This combination of benefits can reduce installed costs as much as \$85 per job for *you*! For further details on Transite for perimeter heating and cooling, write Johns-Manville, Box 14, AA-4, New York 16, N. Y. In Canada: Port Credit, Ontario. Offices throughout the world. Cable address: Johnmanvil.

MINIMUM CONCRETE SAVINGS USING TRANSITE AIR DUCT



JOHNS-MANVILLE
TRANSITE AIR DUCT





Idea Exchange for Dealers-Contractors

Direct Mail Appeal Pulls Humidifier Prospects

ONE OF THE LESSONS learned early in his business experience, according to Austin B. Young, president of Monroe Air Conditioning Co., Rochester, N.Y., was that the best opening statement for a sales presentation is one that immediately gets the prospect's attention. Keeping this rule in mind, Mr. Young has prepared, with the help of a humidifier manufacturer, a four-page brochure to use as a direct mail piece during the winter months when homeowners are more conscious of low humidity conditions in their homes.

The brochure is printed on heavy paper (110 lb) and in three colors (black, white, and green) and quickly gets the prospect's attention by announcing on the cover of the brochure, "The Story of Humidity and How It Affects Your Health and Your Comfort During the Heating Season as told by Monroe Air Conditioning Co."

Brochure Answers Questions

When the brochure is opened, large headlines ask: "What is Relative Humidity? — How Does It Affect Your Health? — How Does It Affect Your Furnishings? — What Is Proper Relative Humidity? — How Much Does It Cost?" Each question is followed by a descriptive explanation.

Under the headline, "How Does It Affect Your Comfort?" is the following explanation: "During the winter, when artificial heating increases the capacity of air to absorb moisture, moisture is absorbed by the air from anything it contacts, causing a dry feeling in a person's nostrils, on his skin, and sometimes, annoying sparks from static electricity.

"This dry, thirsty, heated air increases evaporation of moisture from the skin—makes you feel cold—requiring a higher thermostat setting from that which gives maximum comfort."

Under the headline of, "How Much Does It Cost?," this explanation appears: "Installation costs vary with the distance between electrical outlets, water supply, and floor drain. A complete estimate is attached to this brochure."

Accompanying the brochure is a letter on the company's stationery (see illustration) that provides the prospect with an estimate of what it will cost to have humidity in his home throughout the winter season.

MONROE AIR CONDITIONING COMPANY
Incorporated
685 Atlantic Avenue
Telephone, BUTLER 8-2797

We are pleased to submit this proposal for the installation of an automatic humidifier in your home.

This humidifier, because of its many design advantages and performance features will efficiently and automatically maintain the exact relative humidity that's best for your family's health and comfort during the winter heating season. This is accomplished by automatic control of the amount of moisture furnished . . . and by the distribution of this moisture in vapor form, assuring fast, uniform humidification to all areas of your home, without annoying, messy mineral dusts or deposits.

Your humidifier will be installed by trained craftsmen who will be dispatched to your home at a pre-arranged time most convenient to you. They will complete the entire installation in _____ hours.

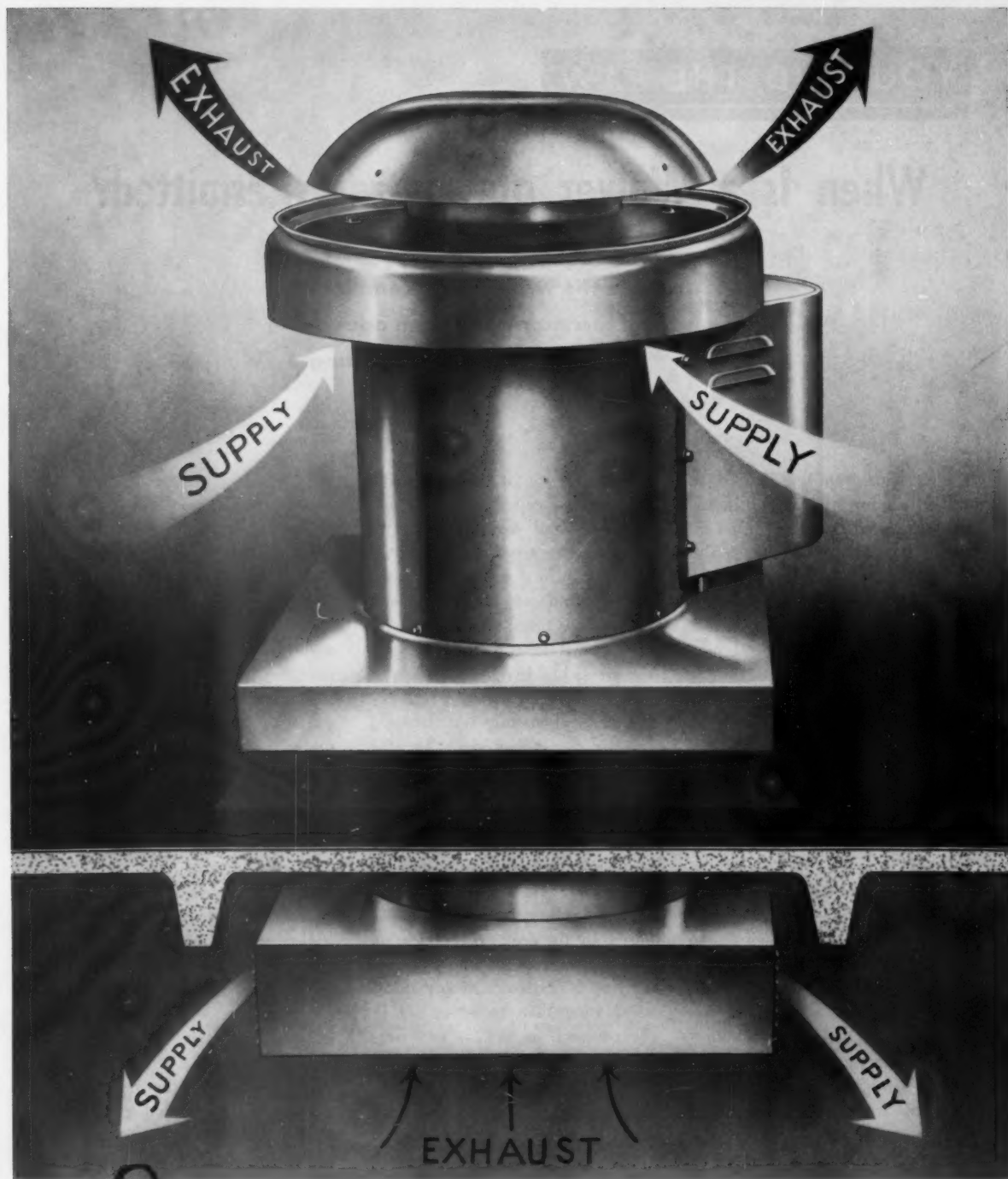
The cost of the humidifier, plus installation, is listed below:

Model Number _____\$ _____
Installation, including labor and materials _____\$ _____
Complete installation _____\$ _____

We shall be most happy to be of service to you in providing you with this high quality product, expertly installed.

Yours very truly,

Officers of Monroe Air Conditioning are Austin B. Young, president, and Reggie N. MacLaughlin, vice president. Both report excellent results from periodic mailings made to homeowners throughout the heating season.



One impeller does it

You get both air supply and exhaust simultaneously with the new Clarage TWINALATOR*. Unique, superior dual function air handling for all types of buildings. Definite money-saving advantages: Requires only one opening, one motor, one drive, one starter. No make-up air unit neces-

sary. Applications unlimited — well adapted to closed or semi-closed systems. Can be provided with heating coils and filters. Write today for Bulletin 552. CLARAGE FAN COMPANY, Kalamazoo, Michigan. Clarage sales engineering offices are located in all principal cities.

*Patented
Trademark

When Is a Waiver of Contract Permitted?

**... where the writing is incomplete
and oral testimony has been added,
according to the courts' ruling**

A CONTRACT FOR the sale of an add-on summer air conditioning unit stipulated that the equipment would be installed complete with standard attachments together with all necessary alterations in duct-work, piping, and electric wiring at the agreed price of \$1460, payable \$35 upon the signing of the agreement and the balance in 24 consecutive payments.

Prepared by the dealer-contractor, the agreement on its front page had the clause: "There is no agreement, verbal or otherwise, which is not set down herein: no waivers or modifications shall be valid unless written upon or attached hereto."

Also printed on the back of the contract, under the heading "Terms and Conditions," was, "There are no warranties, expressed or implied, made by either the manufacturer or the seller, other than the manufacturer's standard warranty on his own equipment."

Description of the equipment sold under this agreement was, "One XYZ Summer Air Conditioner, with all necessary ducts, piping, and electric wiring."

Customer Orders Removal

During the first month after this equipment had been installed and two or three times during the succeeding two months, the serv-

ice department of the dealer-contractor was called upon for adjustments and maintenance. Two months after the date of the installation, the customer ordered the removal of the equipment, contending that it neither maintained the temperature or purified the air as had been assured by the dealer-contractor.

Later, when suit was brought by the dealer-contractor for the amount payable under this agreement, the customer contended that the equipment was not as represented and had failed to give the performance that was promised.

Protest against a consideration of these claims by the court was based, by the dealer-contractor, on the two clauses of the contract denying the existence of any agreement other than those set out in the contract, as well as any warranties except those expressly stated.

Contract was Incomplete

This second clause, it was pointed out by the court, did not cover the installation or the services to be rendered the customer by the dealer-contractor but only the equipment itself.

Where the writing is incomplete, said the court of this omission it may be added to by oral testimony. "This contract, when examined, was evidently incom-

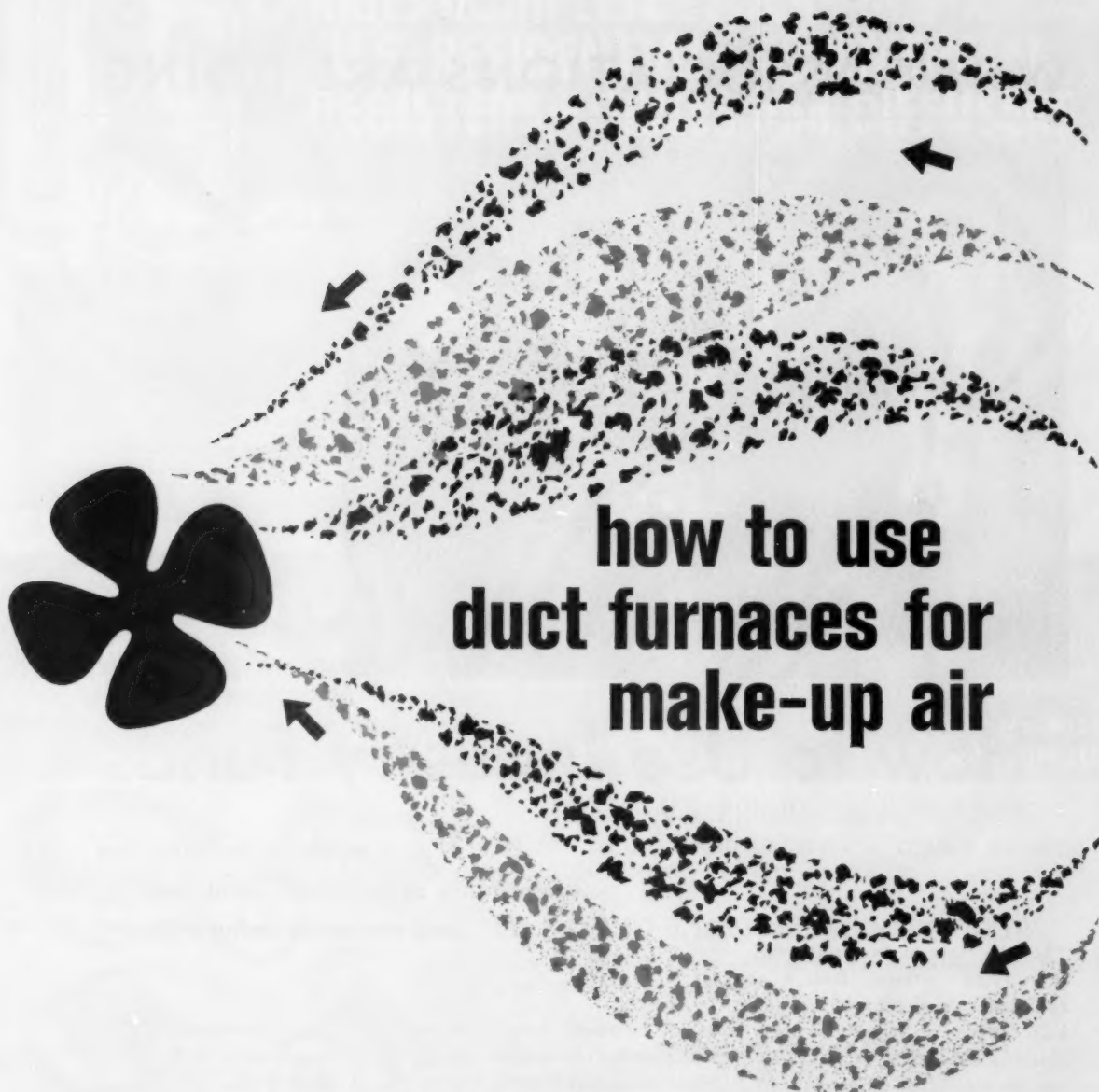
plete," it was asserted. "Considered particularly, it shows the sale of specific and particular articles of property. Taken as a whole, it shows an agreement to install these pieces of property in such a way as to constitute a unity which will air condition the customer's premises."

Here in denying a recovery on the note given by the purchaser under this contract, the court followed a provision of the law known as the Uniform Sales Act, that rights, duties, and liabilities which are implied in the performance of contracts, such as these, may be either varied or waived entirely by express agreement.

Conditional Sales Defended

Had this second provision, waiving any warranties in the sale of the equipment, been more carefully phrased by the dealer-contractor, and so worded that it related not only to the equipment but to the work of installation as well, the dealer-contractor would undoubtedly have recovered the balance for which he had sued.

This right of a dealer-contractor to make a waiver of any defenses by the customer and to condition the sale on the surrender of defenses of this character by the customer, as was attempted here, is generally recognized by courts throughout the country.



how to use duct furnaces for make-up air

Free from Reznor: Learn about this profitable use of duct furnaces along with other valuable information on make-up air in our just published handbook "What to Consider in Designing Make-Up Air Systems."

Manufacturing plants, chemical, food and material processors, restaurants, bakeries and dry cleaners are becoming increasingly aware of the need for make-up air. They now realize that bringing in clean, heated replacement air through a duct furnace can prevent undesirable

drafts and the infiltration of dust, dirt and fumes.

Reznor's handbook on make-up air is one of a new series of Reznor Heating Handbooks to help you solve commercial and industrial heating problems. For your copy, published by the world's largest manufacturer of gas unit heaters, fill in the coupon and mail to Reznor. Or, for more information, call your Reznor distributor or nearby Reznor district office listed in the Yellow Pages under "Heaters—Unit."



REZNOR HEATERS

REZNOR MANUFACTURING COMPANY
Dept. AA-4, Mercer, Pennsylvania
Send me a copy of "What to Consider in
Designing Make-Up Air Systems."



name _____ title _____
company _____
address _____
city _____ state _____

WHAT ASSOCIATIONS ARE DOING



SUGGESTIONS for starting an industry promotion fund are given by K. L. Kimmel (second from right) to (l to r) Richard Seelye, James L. Quade and Ervin Belisle

How to Use Industry Funds

... to promote the technical competence of the sheet metal, heating and air conditioning industry

"As a SMALL BUSINESSMAN, the sheet metal contractor finds it a continuous and difficult task to keep architects, consulting engineers, general contractors, building owners, plant engineers and the many other people important to him constantly informed as to the type of work he is capable of performing, and which has been assigned to his industry either through agreement between construction trade unions or by jurisdictional rulings.

"This task can be more effectively accomplished when sheet metal contractors join a local association to achieve their objective. When a local association fails to perform this type of work, the next best thing is an industry promotion fund such as we have in the Detroit area," said K. L. Kimmel, president, E. W. Ensroth Co.,

as he addressed delegates to the 15th annual convention of the Sheet Metal and Roofing Contractors Association of Minnesota held in Rochester.

Here Are Advantages

In outlining the advantages of an industry promotion fund, Mr. Kimmel mentioned these points:

1) The small businessman and small, but essential skilled trades are placed on a level equal with big business and large trade groups.

2) Such a program provides the basis for uniform contract conditions.

3) It assists in obtaining specifications that assign all work that

should be performed by the sheet metal contractor in the sheet metal specification.

4) It prepares the groundwork for common bidding practices among competing contractors.

5) It increases the prestige of the industry.

6) It aids in upgrading the work of all contractors serving an area.

7) It advances funds that make desirable customer education programs possible.

8) It provides incentive to improve "in trade" educational programs.

9) It provides a means whereby each sheet metal contractor assumes equally a fair share of the

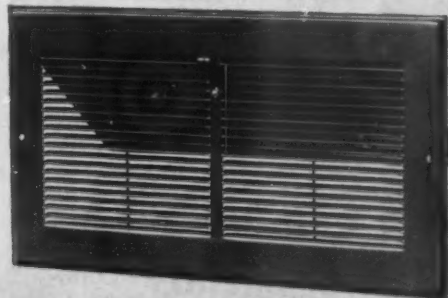
(Continued on page 82)



CARRIES COMPLETE STOCKS of STANDARD U.S. RESIDENTIAL—COMMERCIAL REGISTERS—GRILLS and DIFFUSERS

New Stepped-Up Production on "Specials"

The World's Finest and Most Complete Lines. A Truthful Statement



THE No. 153 U.S. A-C REGISTER

SINGLE-VALVE. With "TIE-BAR" that Stops the "HUM" and "STRUM" of Vibrating Grille-Bars evident in other Lines.

This is the GREATEST VALUE of all Single Valve Registers. All Base Registers—Intakes and Vents are Made with "SOUND-KILLING TIE-BAR."

THE No. 1000 SERIES OF U.S. BASE DIFFUSERS

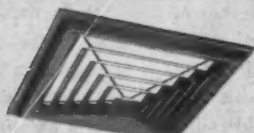
Sets "THE PACE" in Perimeter Diffuser Production. Though copied by others the No. 1000 LEADS THEM ALL by a Terrific Margin. Get the Best.



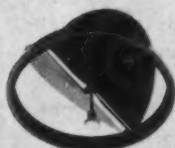
The No. 1024
U.S. BASE DIFFUSER



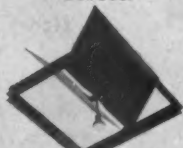
No. 1500 Round Ceiling
Diffuser



No. 2500 Square Ceiling
Diffuser



No. 1800 Round Damper



No. 2800 Square Damper

The No. 1500 U.S. ROUND CEILING DIFFUSERS

The BEST of ALL PRODUCTION-MADE CEILING DIFFUSERS—MOST COMPETITIVELY PRICED.

The No. 2500 U.S. SQUARE CEILING DIFFUSERS

Excel all other Competitive Square Ceiling Diffusers PRICE-WISE, QUALITY-WISE, and OTHER-WISE.

No. 1800 Line ROUND CEILING DAMPER for No. 1500's

No. 2800 Line SQUARE CEILING DAMPER for No. 1800's

The No. 410 U.S. DIFFUSER FLOOR REGISTER

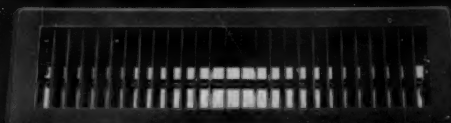
Has Wider Margins for Hole Coverage. GRADUATED CURVED GRILLE BARS. The GREATEST VALUE in FLOOR DIFFUSER.

The No. 413 U.S. STAMPAIRE FLOOR DIFFUSER

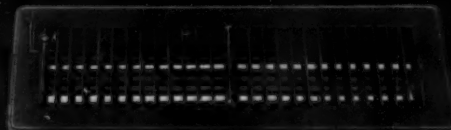
STAMPED FACE—GRADUATED GRILLE BARS. Designed for Competitive Projects where the strength and Quality of the No. 410 is not required.

The
Quality-Supreme
Line of All

The
Competitive
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Quality Line



The No. 410 U.S. DIFFUSER FLOOR REGISTER



The No. 413 U.S. STAMPAIRE FLOOR DIFFUSER

ALL U.S. REGISTERS and GRILLES are SCIENTIFICALLY RUST-PROOFED Before Finishing



Completely described in Catalog "A" — Write For Your Copy

UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN
MINNEAPOLIS • KANSAS CITY • ALBANY

WITH THE ASSOCIATIONS

(Continued from page 80)



NEW OFFICERS for 1961 are (seated, l to r): Richard Peterson, Duluth, treasurer; Truman J. Johnson, Austin, president; C. J. Porter, Rochester, past president; Fred Vogt, Minneapolis, vice president; and Roger Meyer, St. Paul, secretary. Standing are Eugene A. Charlebois, Marshall, sergeant-at-arms, and directors J. James Walsh, St. Paul; Lowell Anderson, Minneapolis; Robert Graving, Minneapolis; Ervin Belisle, St. Paul; Howard Camitsch (new association executive secretary); and Les Brown, Little Falls. Director Norton Jamar, Duluth, was not available.

expense involved in the program.

10) Work involved in collection of funds is minimized.

Value Is Proved

The Detroit program has been in operation for almost two years and its work is showing the value of trade promotion to those who must deal with most of the separate construction trades and who aren't too certain of work assignments of new materials and processes. One example Mr. Kimmel pointed out was the prefabrication of curtain wall panels. He explained how incorrectly written specifications could result in the assignment of this work to other unions.

How Program Is Started

Industry funds are made available by an agreement among local contractors after first notifying the local Internal Revenue office of the intention to collect these funds for industry promotion. The agreement and other details of

setting up the method of collection, notification of government agencies and other parties involved should be handled by an attorney to assure a fair distribution of costs — and should it become necessary later to legally force compliance from all participating members.

Pay 3 Cents an Hour

In Detroit the amount collected is 3 cents per hr of each productive hour worked by union employees. This provides an easy method of reporting the amount contributed to the industry fund, as health and welfare, vacation and other production labor funds are paid on the same basis.

Unions Favor Plan

Union members are agreeable to the use of industry promotion funds because of the many benefits offered. For example, such a program:

1) Helps to establish jurisdiction of a craft's skills and to en-

force the right to exercise them.

2) Increases the amount of potential work through proper assignment in specifications.

3) Emphasizes quality.

4) Contributes to research that can provide more work in the future.

Money collected in the Detroit area last year amounted to nearly \$50,000. This money was spent in promoting good ventilating procedures, uniform contract conditions, and good specifications writing. The fund made it possible for participants in the program to contribute awards to a local annual draftsman's competition, hire legal representatives, distribute sheet metal manuals and establish a research program for the development of a high pressure duct manual. Other projects are planned by a six-man committee selected from the participating members.

Other Areas Show Interest

Warm air heating and air conditioning dealer-contractors can

(Continued on page 92)

NOW... BOOST

Spring and Summer
Business with...

Check the qualities and the features... then the price. New Moncrief Air Cooled Condensing Units reduce your costs while giving your customers satisfaction which, dollar per BTU, is unexcelled.

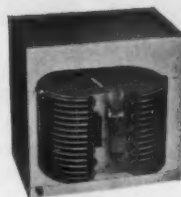
Easy, speedy installation and service are accomplished by placing operating parts within easy reach and by making the refrigerant and wiring circuits uncomplicated. Quiet operation is achieved with low-velocity, top discharge of condenser air through the large-area coil from a powerful fan and motor, housed completely inside the cabinet. Unsheltered outdoor installation of the rugged, zinc-coated cabinet is Listed by U. L.

Companion Moncrief Furnaces, with extra blower capacity built-in, and matching Plenum, Duct and Counterflow Evaporator Coils make ideal, competitively priced heating-cooling combinations. Versatile 3, 4 and 5 Ton Air Handling Units complete the line.

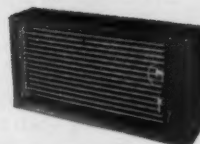
It's the early-season installations that build sales for the entire season. So start now. Call your Moncrief Wholesaler, now.

NEW AIR COOLED UNITS

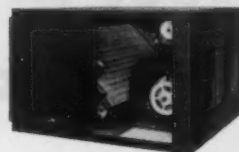
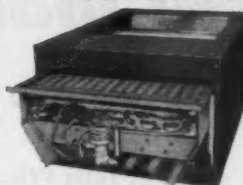
2-3-4-5 Ton Condensing



Upflow
Counterflow



Horizontal
Blower-Coil



Gas and Oil
Winter A. C.
Units . . .
Plenum Type
Evaporators.



Gas and Oil
Counterflow
Units . . .
Counterflow
Evaporators.



Gas and Oil
Horizontal Furnaces . . .
Duct Type Evaporators.



Gas or Oil
Combination
Year 'Round
A. C. Units
. . . Air or
Water Cooled.



2 Ton
(23,000
Btu/Hr.)
and 3 Ton
(35,000
Btu/Hr.)
Air Cooled,
Self-Contained
Units.

MONCRIEF

THE HENRY FURNACE

HEATING AND AIR CONDITIONING UNITS

MONCRIEF
SINCE 1895

COMPANY • MEDINA, OHIO

FURNACE PIPE AND FITTINGS



OFFICERS, DIRECTORS AND MEMBERS OF THE ADVISORY BOARD for 1961 are (seated, l to r): A. Demshar, West Allis, treasurer; Lyle O'Leary, Milwaukee, secretary; Al Olsen, Racine, second vice president; Martin M. Petersen, Kenosha, president; James Harbridge, Fond du Lac, first vice president; and Robert S. Schmieder, Milwaukee, executive secretary. Standing are board members A. T. Ihde, Milwaukee; Ben Brozek, Milwaukee; Carl Behrnd, Madison; Frank Kramer, Milwaukee; F. C. Heiden, Manitowoc; Walter Smith, Fort Atkinson; Mike Poja, Milwaukee; Louis Albrecht, Madison

Sheet Metal Industry Needs More and Better Apprentices

... speaker tells Wisconsin delegates.

State official introduces new training standards developed by statewide joint committee

"INCREASED SKILLS and versatility are needed more today by sheet metal workers than at any time in the past because of the many types of products being continually introduced by industry. The only way to furnish mechanics with the ability to solve sheet metal fabri-

cating problems involved in the use of current equipment and that which will be developed in the future is to provide adequate training for apprentices. This is the assignment of the recently reactivated Sheet Metal Joint Apprenticeship Committee," said

Harold T. Arpin, assistant director, apprenticeship division, Wisconsin Industrial Commission, in outlining the committee's objectives to delegates at the convention of the Sheet Metal Contractors Association of Wisconsin.

(Continued on page 86)

**ONLY
CRESCENT OFFERS
THIS COMPLETE
LINE!**



NONE BETTER ANYWHERE!

CRESCENT and CRESTOLOY Wrenches are made by the originators of the 22½° adjustable wrench. They have been widely copied but never equalled for design, balance, quality and all-around performance. The buyer who wants top value in tools insists on CRESCENT.

Sold by hardware dealers and industrial distributors everywhere.



Crescent is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by **CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK**

WITH THE ASSOCIATIONS

(Continued from page 84)



ADDITIONAL information about activities of the national association is requested by delegate Carl H. Behrnd, Madison (right) of Joseph D. Wilder (extreme left), executive secretary of SMACNA

A set of standards as developed and approved by the statewide joint committee for training apprentices was introduced. There are local joint training committees in 21 cities at present, with six more being formed. They will operate according to the training program outlined in the new set of standards.

Want 50% More Apprentices

According to Mr. Arpin, there are 263 sheet metal apprentices in Wisconsin, 123 of whom are in Milwaukee. Efforts will be made to increase this number by 50 percent during the next 12 months. The increase in apprenticeship training is part of the over-all plan to provide sufficient skilled workmen for the increased building program that will be under way in 1966, when this year's beginners complete their courses.

The training standards set forth the following specifications:

The term of apprenticeship shall be five years but not less than 10,000 hours, of which the first

1000 hours shall constitute the probationary period, but in no case shall this period extend beyond six months.

In the event an apprentice completes his 10,000 hours in less than five years, then the tenth period wage rate shall prevail to the end of the apprenticeship calendar time.

School attendance shall be not less than four hours per week, or the equivalent, for a minimum total of 400 hours, at classes in subjects related to the trade when such classes are available.

The apprentice shall, when related night classes are available, attend night school on his own time and take such subjects and for such period of time as the employer and/or joint committee deem advisable.

Advantages of New Program

Changes in the apprenticeship training program as provided for in the standards will enable the joint committees to adopt new techniques developed by the na-

tional joint apprenticeship committee. Recent progress made by this group was reported upon by Joseph D. Wilder, executive secretary, Sheet Metal and Air Conditioning Contractors National Association. Mr. Wilder outlined a method of pattern development that uses geometry as the basis for this type of work. The procedure has been tested and found superior to present day methods of developing sheet metal patterns. The new technique will be explained to delegates attending SMACNA's convention April 24-26 in Los Angeles.

Explains Industry Funds

Industry funds and how they are helping the sheet metal industry were also described by Mr. Wilder in his report on future prospects for industry growth.

The state association adopted a resolution to change its name to Sheet Metal and Air Conditioning Contractors Association of Wisconsin.

(More association news on page 88)

GETTING YOUR SHARE OF THE METAL ROOFING BUSINESS?



Every day more and more metal roofs of Follansbee Terne are going on new modern buildings

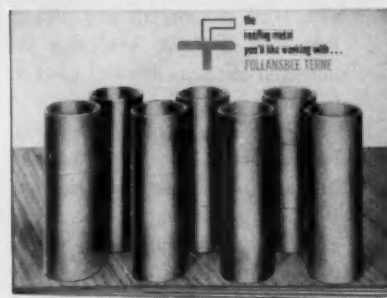
You've probably noticed it too—the metal roof of Follansbee Terne (you may know it as "tin") is getting more popular every day. There's good reason for the increased interest in Terne—modern day architecture is giving more recognition to the roof as an important design element, and the metal roof provides the architect with an opportunity to use distinctive form and color to create a desired effect.

Form and color are not the only advantages of Terne. Time and time again, Terne has proved it is a lifetime material. Many Terne roofs have been in service for over 100 years.

For the roofer, Follansbee Terne means a better roofing job and a better profit. It is easy to work, easy to solder and Terne's lead-tin alloy coating makes an excellent bond with paint. Follansbee Terne is priced to offer the roofer a better profit.

As a complete roof material, or as weather-sealing, Follansbee Terne is a roofing metal that has no equal. It's a building material that will help you get your share of the metal roofing business.

NEW a book prepared especially for sheet metal contractors



Gentlemen:

Send me your free book on Follansbee Terne.

Name

Firm

Street

City Zone

State



FOLLANSBEE STEEL CORPORATION
Follansbee, West Virginia

Year 'Round Air Conditioning Market

PAST, PRESENT and future potential of the summer air conditioning market was examined by members of a forum moderated by William Feldman of the New York State Sheet Metal, Roofing and Air Conditioning Contractors' Association, Inc., at its 38th annual convention in Syracuse. Other members of the panel were George T. Long, Arthur E. Meling and Kenneth R. Vaughn, all associated with Carrier Air Conditioning Co. F. E. Hockensmith, Lennox Industries Inc., also spoke on air conditioning as it is applied to residences.

Traces Industry Growth

Mr. Long, discussing the growth of the industry, pointed out that from a level of less than a million tons of refrigeration sold in 1950, '51 and '52, sales climbed steadily to a total of more than 4 million tons sold in 1959. Analyzing the potential of the residential market, he said:

"There are about 50 million homes served by electric utilities in the United States. In the late 1960's this number is expected to grow tremendously. Only about 6 million Americans now have some form of air conditioning. About 1 million of these have central systems and the remaining 5 million have one or more room air conditioners. This leaves a tremendous potential.

"At what rate is this market being sold? In 1958 there were 140,000 central residential air conditioning installations and in 1959 we hit the 200,000 figure. In 1960, our latest figures show about 216,000, and for 1961 we predict about 240,000.

"Today about one out of every

10 new homes is being air conditioned at the time of construction. Seven years ago the ratio was one in every 70.

Cooling Ups Home Sales

"A Chicago builder recently offered air conditioning in all his homes as a standard — not an optional — feature. His sales rose from 125 to 150 last year at the same time that his competitors' sales were off 30 percent.

Schools Also a Market

"Another market for summer air conditioning is found in schools. By 1970 we'll need 607,000 new elementary and secondary classrooms. With the average cooling load per classroom about 3 tons, by 1970 we could theoretically add more than 1,800,000 tons of cooling capacity in new structures alone, to say nothing of relieving conditions in currently non-air conditioned schools."

Not Enough Servicemen

Mr. Meling pointed to the serious limitations in growth faced by the air conditioning industry because of the shortage of properly trained installation and service personnel. He said there are many good training programs now in operation, including those offered by manufacturers, distributors and associations, but that "if each of these groups could be relieved of training men in the fundamentals, they could concentrate on more

... is reviewed at New York

State convention

specialized and advanced training, such as trouble-shooting. Manufacturers could devote more attention to the characteristics of their specific equipment.

"If the industry is to realize its full potential reasonably soon, two things must be done: 1) Additional people must be made available promptly through extension programs for adults; 2) A training program should be started in the secondary schools for young men who will enter industry upon graduation from high school."

Steps in System Adjustment

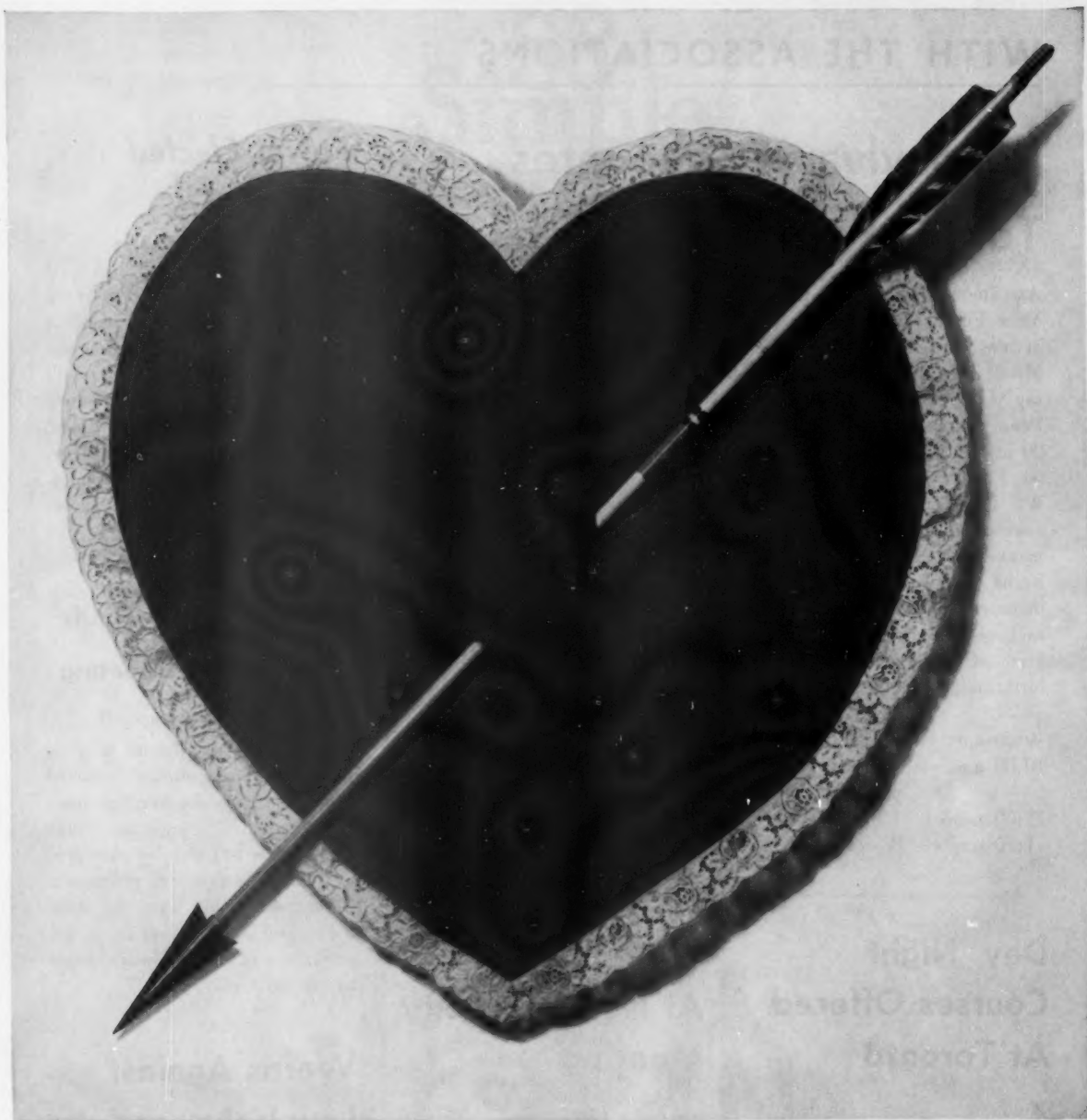
Mr. Hockensmith, discussing residential heating adjustments, described procedures to follow in achieving maximum comfort conditions. He listed seven steps: 1) Check thermostat; 2) Check input; 3) Set limit control; 4) Correct temperature rise; 5) Set blower speed; 6) Set blower control; and 7) Balance temperature between rooms.

He also discussed addition of summer air conditioning to existing warm air heating systems, giving examples of typical problems encountered and presenting step-by-step solutions.

New Association Officers

Officers elected by the association are: George Ballard Jr., president; Peter Sturr, first vice president; Solon Sprinchorn, second vice president; and William R. Nolder, past president.

(More association news on page 90)



WILL YOUR CUSTOMERS STILL LOVE YOU IN 1966?

Five years from now, will your air conditioning customers still be as satisfied with the equipment you're selling today? Or will they be disillusioned by poor performance and the high cost of operation and maintenance?

There's one sure way to keep your customers' affection—and keep your own cost of servicing low—and that's to install quality equipment . . . Chrysler equipment.

You can't put a price tag now on the extra value Chrysler's 25 years of air conditioning experience adds to every unit. But you *can* see the quality engineering features *standard* on Chrysler equipment for which your customers normally pay extra. And in 1966, you'll be able to compute the money you've saved on service calls . . . and count the Chrysler compressors that didn't fail.

One more question to ask yourself: Will the manufacturer of your present line even be in business five

years from now to supply parts and servicing? You know Chrysler will!

You owe it to your future profits, and your customers' confidence, to get the full story on Chrysler air conditioning and furnaces. Call your local Chrysler Distributor . . . today!



Chrysler Corporation, Airtemp Division, Dept. J-41, Dayton 4, Ohio

Pennsylvania Delegates To 'Look at the Future'

AMBRIDGE, PA. — "A Look at Your Future" will be the theme of the convention of the Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania, scheduled Apr. 28-29 at the Benjamin Franklin Hotel, Philadelphia. According to E. W. Liebermann, secretary, the convention committee, co-chaired by Jack Simmons and Frank Sherwood, has used this theme as a pattern in planning each session. Following is a program of events scheduled for the forthcoming meeting:

April 28

- 9:00 a.m. — Registration
- 10:00 a.m. — Tour of Philadelphia
- 12:00 noon — Luncheon
- 1:30 p.m. — Business session

2:30 p.m. — Panel discussion: Peeking Into the Future

April 29

- 9:00 a.m. — Report of nominating committee
- 9:30 a.m. — Business management session
- Cost Control Panel
- 2:30 p.m. — Air Conditioning Panel
- 3:30 p.m. — Business session
- 7:30 p.m. — Banquet

In addition to the business sessions, numerous social events have been planned to make the convention an enjoyable and memorable occasion. Tours are available for those who wish to learn more about the historical part of Philadelphia. The ladies' program includes a tour to Valley Forge Park.

Favret Elected President By Ohio Group

CINCINNATI — William Favret, Columbus, was elected president of the Ohio Sheet Metal Contractors' Association at the group's recent annual convention. New vice presidents are Paul Enda, Cincinnati; Robert Butler, Dayton; and Donald Fields, Youngstown. Douglas Winning, Cleveland, is past president.

Discuss Industry Funds At Minnesota Meeting

(Continued from page 82)

— and do in the Detroit area — participate in a similar industry promotion program. In other areas of the country, groups are working together to foster industry promotion funds that will promote a closer relationship with the other fellow and should result in an appreciation of the problems faced by competitors.

Day, Night Courses Offered At Toronto

TORONTO — Some 30 delegates recently completed a night school course at Danforth Technical School, Toronto, presented under the direction of James M. Henderson, technical director for the National Warm Air Heating and Air Conditioning Association of Canada. A similar course was offered earlier this year at Western Technical School, also in Toronto. In response to numerous requests, the association has also made arrangements to conduct a day school course at the Conroy Hotel April 24-27. Applicants may register at association headquarters.

Install Officers At New York City Meeting

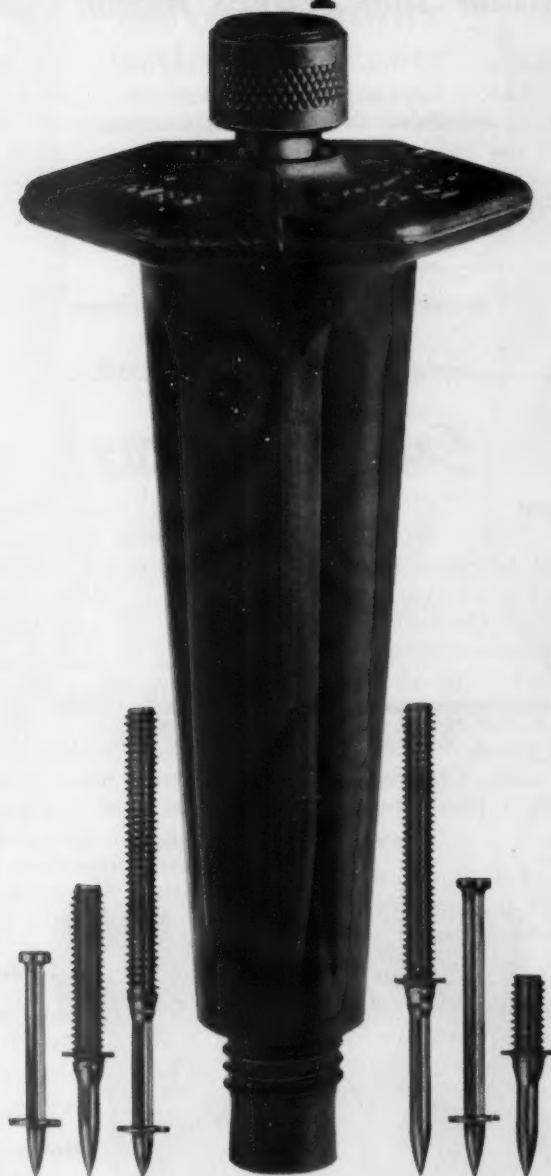
NEW YORK CITY — Feature of a recent meeting of the Roofing & Sheet Metal Crafts Institute, Inc. was the installation of newly elected officers. Abe Geliebter, outgoing president, welcomed the members and their wives. Milton Magid is the group's new president; Milton Axman, Morty Green and Harold Fielder, first, second and third vice presidents respectively; Jesse Weisman, treasurer; Sam Canal and Benjamin Rosenbaum, corresponding and recording secretary respectively; and R. Willman, sergeant-at-arms.

Warns Against Low Valve and Switch Location

KALAMAZOO — The Kalamazoo Heating & Air Conditioning Association reports that it has been receiving complaints about disconnect switches and main gas shut-offs being located so close to floor level that they are easily accessible to children playing in the area. The association urges dealer-contractors to make sure that switches are located more than 5 ft above floor level.

(More association news on page 92)

So Simple



It's a wonder nobody thought of it sooner

This is Shure-Set,[®] the tool that makes permanent attachments to concrete or building block with less than ten taps of a hammer. And it's about as easy to use as the hammer. Special steel fasteners are inserted at one end, your hammer strikes the other. And that's all, the fastening is made. (No powder charges are necessary.)

There's no drilling or plugging to do. And none of the problems associated with masonry nails. Shure-Set's anvil, an easy target to hit, concentrates the force of your hammer blow and applies it directly to the head of the fastener inside Shure-Set's precision bore. That way the hammer never skews

off and the fastener never wavers. (Your fingers are well protected, too.)

And the austempered steel fasteners (nail-like drive pins and threaded studs) can't bend or break or fly around the room; they have the ideal metallurgical characteristics for efficiently penetrating hard construction materials.

Shure-Set will pay for itself by saving time. Probably on the very first job. It also saves a lot of (put your own price on it) perspiration. It's made by Ramset Fastening System. Write for more information, or call your local Ramset dealer. He's listed under "Tools" in The Yellow Pages.

Ramset Fastening System

WINCHESTER-WESTERN DIVISION **Olin** 306-D Winchester Ave., New Haven 4, Conn.

WITH THE ASSOCIATIONS

(Continued from page 90)

Convention Ship Leaves Miami April 21

LAKELAND, FLA. — The Roofing & Sheet Metal Contractors Association of Florida reports that reservations for its Nassau convention cruise have passed the 200 mark. The SS Bahama Star is scheduled to leave Miami at 3:00 p.m., April 21, and will arrive in Nassau Saturday morning, April

22. Association members and their families, after spending two full days in Nassau enjoying the scenery and other tourist attractions, will sail for Miami early Monday morning.

As a service to its members, the association has arranged a special trip-accident insurance package.

This insurance covers policy holders from the time they leave home until they return — a maximum of five days.

Members of the convention committee include Wyley Sheperd, Miami; Victor Kinsey, West Palm Beach; and Howard Carpenter, West Palm Beach.

Coming Events

April

Apr. 19-21 — National Association of Sheet Metal Distributors, spring convention. Sheraton-Cleveland Hotel, Cleveland. Thomas A. Fernley Jr., executive secretary, 1900 Arch St., Philadelphia 3.

Apr. 21-24 — Roofing & Sheet Metal Contractors Association of Florida. SS Bahama Star, en route to Nassau. F. D. Wesley, managing director, P. O. Box 1044, Lakeland Fla.

Apr. 23-26 — Oil Heat Institute, annual convention. Statler-Hilton Hotel, Washington, D. C. Charles R. Burkhardt, managing director, 500 5th Ave., New York 36.

Apr. 24-26 — Sheet Metal and Air Conditioning Contractors' National Association, annual convention. Ambassador Hotel, Los Angeles. J. D. Wilder, executive secretary, 107 Center St., Elgin, Ill.

Apr. 28-29 — Sheet Metal, Air Conditioning and Roofing Contractors' Association of Pennsylvania, annual convention. Benjamin Franklin Hotel, Philadelphia. Earl W. Liebermann, secretary, 1411 Merchant St., Ambridge, Pa.

May

May 21-23 — Northamerican Heating & Air-conditioning Wholesalers, Inc., spring con-

vention. Queen Elizabeth Hotel, Montreal. Wilbur R. Bull, managing director, 1200 W. Fifth Ave., Columbus 12, Ohio.

June

June 6-8 — Eastern Biennial Exposition of Oil Heat and Air Conditioning. Hotel Statler-Hilton. Clarence H. Fay, executive secretary, Oil-Heat Institute of New England, 330 Stuart St., Boston 16.

June 29-July 1 — Carolinas Roofing & Sheet Metal Contractors Association, annual convention. Ocean Forest Hotel, Myrtle Beach, S.C. H. J. Stockard Jr., executive secretary, Raleigh, N.C.

October

Oct. 1-4 — American Gas Association, annual convention. Dallas, Texas. C.S. Stackpole, managing director, 420 Lexington Ave., New York 17.

November

Nov. 6-8 — National Warm Air Heating and Air Conditioning Association, 48th annual convention. Hotel LaSalle, Chicago. James M. Martin, managing director, 640 Engineers Bldg., Cleveland 14.

Nov. 12-15 — Air-Conditioning and Refrigeration Institute, annual meeting. The Homestead, Hot Springs, Va. Geo. S. Jones Jr., managing director, 1346 Connecticut Ave., Washington 6, D. C.



NEW

**The DAY & NIGHT
horizontal furnace
is more compact.**

**You can vent
from either side.**

**You can bring return
air to either side.**

**Burner, blower,
and control access —
all are in one
convenient end panel.**

It's much easier, and more
profitable, to install. And you
sell and install Day & Night's
traditional trouble-free quality.

For complete specifications on
this new HA series, write today to:

DAY & NIGHT

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855 Anaheim-Puente Road
La Puente, California**



EQUIPMENT DEVELOPMENTS

INFORMATION on capacities, dimensions, applications, and special features in each Equipment Development item is presented in accordance with material furnished by the manufacturers.

Lock Forming Tools To do Six Operations

ADDITIONAL tools for use with the Pullmax machine, form six different shapes to fill standard requirements of sheet metal work. Tools are available for doing the following operations: lock fold; grooved lock; flanged channel; slide lock; dutch fold; false wired edge.

These operations are in addition to the regular work done on machines produced by the company which include straight, irregular, circular, slot and louver cutting, plus dishing, beading, joggling, edge bending, flanging and nibbling.

The tools are designed to carry out a successive forming of metal along a straight edge. Capacity of the tools is 16 ga in mild steel—*American Pullmax Co., Inc., 2455 N. Sheffield Ave., Chicago 14.*

Hydraulic Gangnotcher To Speed Punching

"SPEEDNOTCH" is designed for precision, single-stroke hydraulic gangnotching of sheet metal ductwork. Capacity is 16 ga mild steel, or equivalent thickness in "stacked" lighter gage. According to the manufacturer, the machine operates 600 percent faster than

hand notching. Up to 5 notches can be set up in less than a minute, in pieces with $3\frac{1}{2}$ in. to 10 ft. stretchout.

The punch holders are equipped with quick-disconnect fittings for making any punch unit inoperative instantly. An automatic relief valve protects the punches and dies from overload damage, while a foot switch permits one-man operation for most types of work.

The self-contained, portable machine is of heavy duty, all steel and welded construction, 10 ft 3 in. x 2 ft x 3 ft 9 in. It comes complete with hydraulic pump, 3 hp motor, oil reservoir, and solenoid main operating valve. Standard tooling includes 40 v-notch

and two 115 deg end-notch punch and die sets. A precision-calibrated 10 ft scale on top of the mounting rail facilitates accurate set-up — *The Lockformer Co., 4615 West Roosevelt Rd., Chicago 50, Ill.*

Lowboy Units Provide Two-in-One Heating

OIL-FIRED type "219" and gas-fired type "119" lowboy winter air conditioners are available in ranges from 110,000 to 175,000 Btuh capacities.

The "119/219" heating line includes large capacity blowers with special blower mounts to reduce operation sound levels. Model "219" includes single speed blower motor with variable speed sheave and v-belt drive; type "119" has centrifugal blower, blower motor with variable speed sheave and v-belt drive. Both models include heavy duty, insulated steel cabinet; all welded steel heat exchanger; combination fan and limit control; chemically treated, replaceable filters.

The units' optional equipment includes an activated charcoal filter, electronic air cleaner, and coiling coil cabinet. Four gas and four oil-fired models are available — *Mueller Climatrol, 2005 West Oklahoma Ave., Milwaukee 1, Wis.*

Other Departments

- New Trade Literature 112
- We Hear That 115
- Wholesaler Doings 118
- Appointments 120



Theodore MonteSano (right), Sec'y-Treasurer of MonteSano and Company, Inc., on a job site with Robert H. Smith, his Dodge Representative.

"75 to 80% of our business comes directly from Dodge Reports"

"Since our first year, 1954, our volume has multiplied almost seven times. And we can trace three-quarters of this increase—or more—to jobs we were informed about through our daily Dodge Reports."

So states Theodore MonteSano, founder of a thriving firm of mechanical contractors in Little Falls, N. J.

"We couldn't operate without Dodge," says Mr. MonteSano. "In fact, we subscribed to the service six months before actually going into business, and consider that those six months of study contributed greatly to our success."

"I studied several methods of gathering building information, and concluded that Dodge Reports are fastest, most accurate and most economical. Reports on bids submitted one day arrive in our office in the next morning's mail."

As the suburbs have grown so has the need for more construction of schools, hospitals and public utilities

in areas adjacent to cities. Even small industries are developing in these areas, close to accessible labor supplies.

"We've been active in this development. While it's a highly competitive situation, by working carefully with Dodge Reports, we've been able to keep abreast of it and see our business grow."

Dodge can help you build your business, too — for only a fraction of the profits they'll help you earn. Send the coupon for further information. Or consult your phone directory for the Dodge office nearest you.



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reports**

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Construction News & Statistics Div., Dept. AA-41
119 West 40th Street, New York 18, N. Y.

I'd like to receive your free booklet, "How to Get More Business in the New Construction Field" and details on how Dodge Reports can help me increase volume and profits.

Name
Company Title
Address
City Zone State

Press Brake Dies Have Wear-resistant Surface

"TUFLOY" press brake dies feature wear resistant surfaces that promise life-long service, according to the manufacturer. The dies are made of heat treated stress relieved, and machine straightened tough alloy steel. Work surfaces are smoothly finished to cut friction and wear to a minimum, and to keep dies from defacing the work. Since heat treatment of dies before or after reworking is not required, they can be reworked or modified without returning them to the factory.

Commonly used 90 and 30 deg bend dies, flattening and offset dies, 3- and 4-way dies, and 90 deg gooseneck punchers are stocked in 2, 4, 6, 8, 10, and 12 ft length. Average die with working shut height of $5\frac{1}{4}$ in. can be used with any standard press brake equipped with die holder and ram adjustment. Special punches and dies are also available—*Niagara Machine & Tool Works, 683 Northland Ave., Buffalo 11, N. Y.*

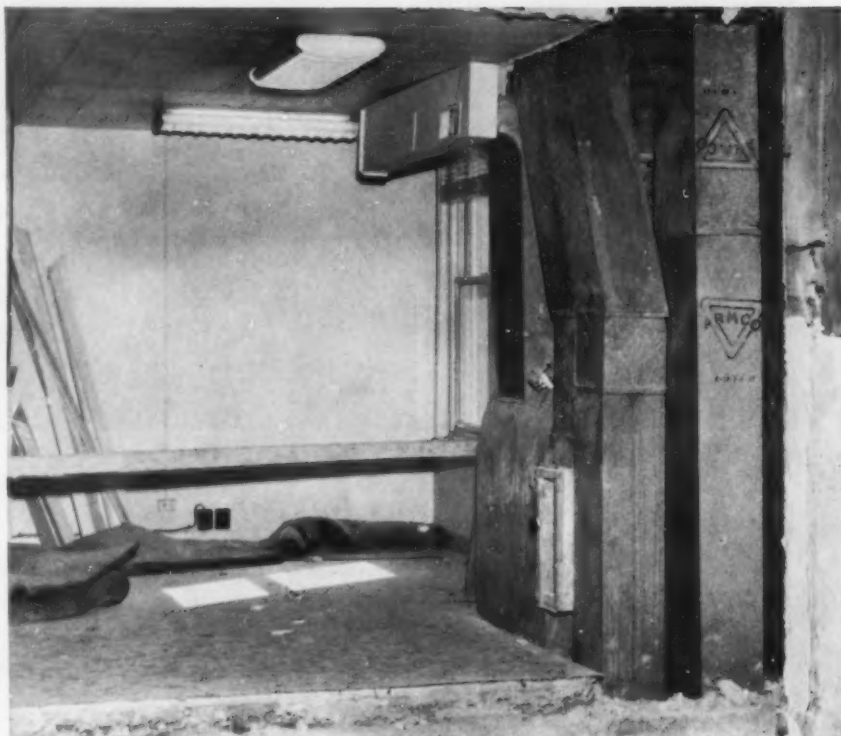
Dual Thermostat Sets Furnace Operation

"GASAVER" SYSTEM of two-stage burner, dual thermostats (indoor and outdoor), completely automatic controls are available in company line of highboy, lowboy, and counterflow furnace models.

In colder weather, the adjustable outdoor thermostat automatically regulates the two-stage burner to operate at full capacity. In milder weather, upon signal from the outdoor thermostat, the burner output is automatically reduced to eliminate overrun and wasted fuel.

The burner unit and manifold are factory assembled and adjusted for proper fit and combustion. Highboy and counterflow

Zinc coating still protects

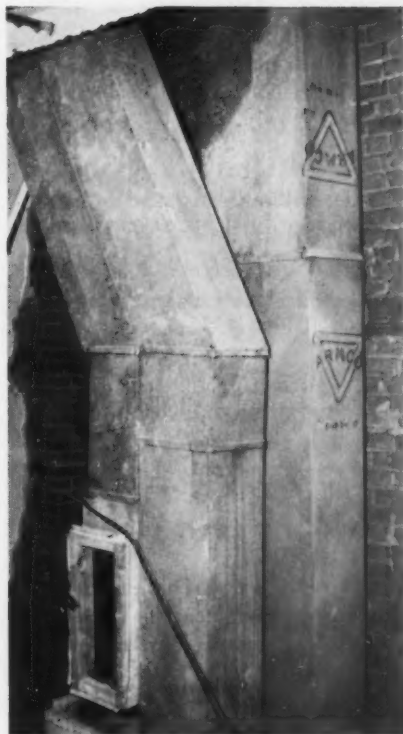


Forty-four-year-old ducts uncovered in Armco General Office.



Steel for
strength,
durability,
economy

44-year-old ducts



Close-up shows excellent condition of ducts installed in 1917. They were enclosed in new walls. No replacements were needed.

New steels are
born at
Armco

Zinc-coated ducts shown here were recently exposed when part of Armco's General Office was remodeled. The zinc coating had darkened, but was still in excellent condition. The base metal was fully protected from corrosion. In fact, the ducts were in such fine condition that it wasn't necessary to replace them when new walls were erected. *Those ducts were installed early in 1917—more than 44 years ago.*

Now, ZINCGRIP

Since that time, many improvements have been made in Armco's zinc-coated steels. Almost a quarter-century ago, Armco developed the continuous hot-dip method for applying zinc coatings to steel. The remarkable new product was called ZINCGRIP®. It was the first steel that could be severely formed or drawn *after* coating, with assurance that the zinc would remain intact.

When you need zinc-coated steel, specify Armco ZINCGRIP Steel with complete confidence. You can be sure that extensive research and production experience is behind every sheet or coil.

For complete information, call your nearest steel service center that stocks Armco ZINCGRIP, or write Armco Division, Armco Steel Corporation, 1721 Curtis Street, Middletown, Ohio.



Armco Division

equipment developments (Continued)

models are completely assembled. As indicated by the manufacturer, control cabinets are leak-tight, dust-tight, and insulated to hand-coolness — *The Williamson Co., 3500 Madison Rd., Cincinnati, O.*

Roof Top Package Unit Permits Zone Control

"LENNOX Roof Top Unit" provides heating and cooling with outside air ventilation all from one centrally located rooftop unit. It has a heating capacity range of 163,000 to 272,000 Btuh output and a cooling capacity maximum of 10 tons. The unit can be controlled by one heating-cooling thermostat, or can be applied to two zones each controlled by a separate thermostat. Automatically controlled outside air is available for ventilation.

The conditioned filtered air is discharged through the optional return air and diffuser head assembly or can be distributed through ductwork. An optional combination return air and supply air plenum is available for ductwork applications.

The unit is available with either manual or automatic fresh air control. There are two complete blowers, heating, and evaporator compartments on each side of the center fresh air and filter section to permit zone control if desired — *Lennox Industries Inc., 200 S. 12th Ave., Marshalltown, Ia.*

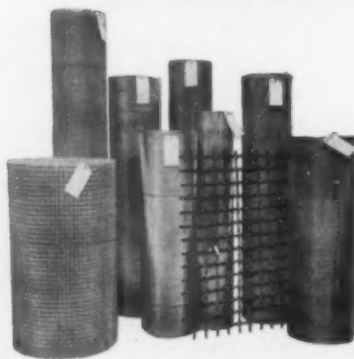
Remote Unit Designed For Low Sound Level

THE 1961 REMOTE "Champion" air conditioner comes in either two-ton (CA-24) or in three-ton (CA-36) models. A low-silhouette, vertical air discharge outside section provides a low sound level, according to the manufacturer. Baked enamel finish protects a heavily coated zinc grip steel casing.



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**CLEVELAND MANUFACTURES WIRE SCREEN
FOR ALL HEATING AND VENTILATING
APPLICATIONS**



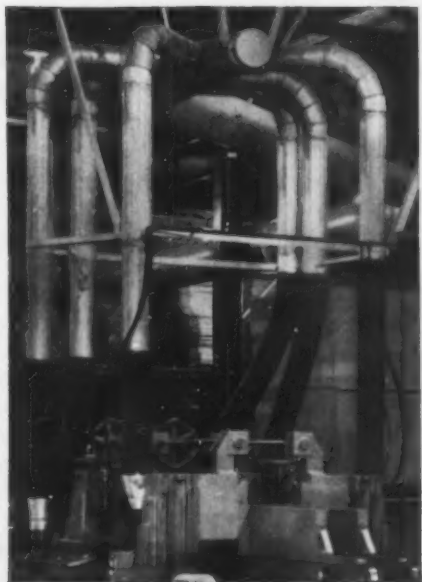
To provide long-lasting, dependable protection of heating, ventilating and air conditioning systems, Cleveland weaves a full range of wire screen meshes. Thousands of stock items—in all meshes, wire sizes, metals and alloys are available for immediate shipment. Order in rolls or flat pieces. Bulletin 160 contains complete information and specification tables on woven wire screen. Write for your free copy today.



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equipment developments (Continued)

Both units have compressors with external spring mounts and crank-case heaters, high and low pressure controls, service valves, improved wiring harness, and aluminum fan blades. The high-boy evaporator coil is for furnace or vertical duct installation. Coils are also available for horizontal duct or counterflow installation along with blower sections, decorative plenums, and combination heating and cooling thermostats — York Div. of Borg-Warner Corp., York, Pa.

Rivet Kit Designed for Blind Fastening Work

"POP" RIVET KIT is offered for use where fastening and assembly operations are common. According to the manufacturer, rivets are high-strength, precision-made hollow rivets assembled on a solid mandrel; they are said to be especially useful for blind fastening where there is limited or no access to the reverse side of the work.

The kit contains 200 each of 10 rivet sizes to permit the handling of a wide variety of applications, a hand tool for setting the rivets, and complete information for use, reordering, and on application methods — Shelton Div., United Shoe Machinery Corp., Shelton, Conn.

Shear Head Permits Varied Angle Cutting

Airserco-Docken shear is portable, electrically operated, and available in two types. No. 8851 is the complete shear, No. 8850 is the shear head only, which can be attached to most makes of industrial, portable, electric drills.

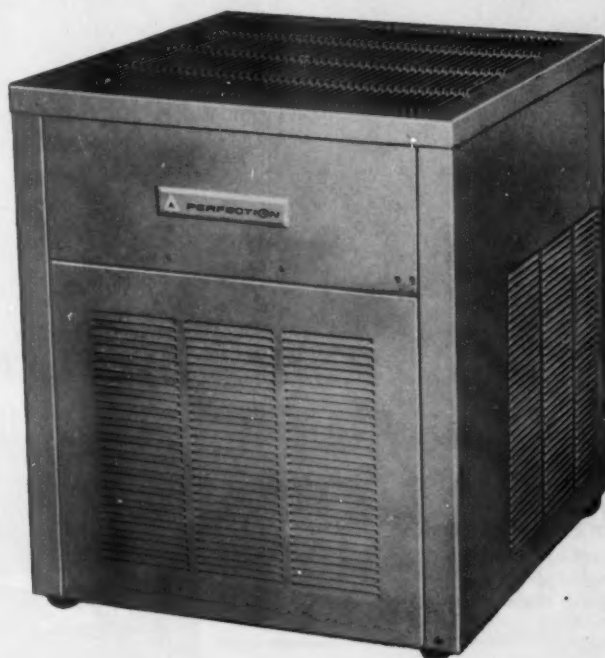
The shear operates by cutting a 3/8 in. ribbon of metal from sheet stock or from any existing flat sur-



PERFECTION IN VERSATILITY

It's easy to match a Perfection air conditioner or heat pump to any installation requirement. Here, for example, is a Perfection remote air-cooled condensing unit and a full selection of indoor coils. The condenser can be installed in any outside location with an upflow, downflow or horizontal indoor coil selected to match the exact requirements of the installation. Horizontal and vertical air handlers are available, too, where added blower capacity is needed. Perfection Tri-Pak Remote Heat Pumps offer equally convenient versatility with indoor components that can be combined to provide any conceivable air flow pattern — to solve any installation problem. And Perfection Tuck-away units — both air conditioners and heat pumps — combine all components in a single compact cabinet for unprecedented ease of installation. Try Perfection for complete flexibility in 2, 3, 4 and 5-ton air conditioners and heat pumps.

Perfectionists are a select group of distributors and dealers. Want complete details? Write Perfection Division, Hupp Corporation, 1135 Ivanhoe Road, Cleveland 10, Ohio.



PERFECTION

equipment developments

(Continued)

face or curved surfaced. Will handle 19 ga sheet metal or its equivalent in other metals and plastics. Operator merely guides the cutter along any scribed line, straight or curved; as pointed out by the manufacturer, the shear does not distort the metal stock, and leaves a clear, smooth edge on the cut — *Airserco Mfg. Co., 435 Melwood Ave., Pittsburgh 13, Pa.*

Split System Designed For 120 F Climate

COMPACT AIR cooled condensing model 1202-03, has a 22,000 Btuh capacity for split system installation, with the cooling coil equipment inside and the condensing equipment outside on the roof or ground. The unit will operate at outside temperatures of 120 F, according to the manufacturer.

Other features include factory wired control panel top discharge; continuous operation with voltage up to 10 percent; a liquid sub-cooling system; zinc coated, bond-erized cabinet construction; rust-proof, weather resistant shaft on the blower motor. The unit is 25-5/16 in. high, and 29 in. wide and deep — *Chrysler Airtemp, P.O. Box 1037, Dayton 1, O.*

Actuators Used for Positioning Equipment

MOTOR ACTUATORS, type "MA," are used for positioning air damper, control valves, programming devices, burner fuel valves, and similar equipment. Models are available with various operating speeds and output torques to suit numerous applications, including use with certain types of electrical control devices.

Motor actuators are dust tight and splash proof, and are powered by a split phase capacitor type motor which drives the output shaft

through precision hobbled reduction gears. Proportional motor actuators include a precision wound potentiometer which is positioned directly from the output shaft to provide a variable voltage signal indicative of actuator position.

Actuators operate on 24 volts a-c, 50-60 cycles. Input is 16 va. Control circuit is 3-wire, 24 volt. Proportional actuators use 135 ohm, 2 watt potentiometers — *Penn Controls, Inc., Goshen, Ind.*

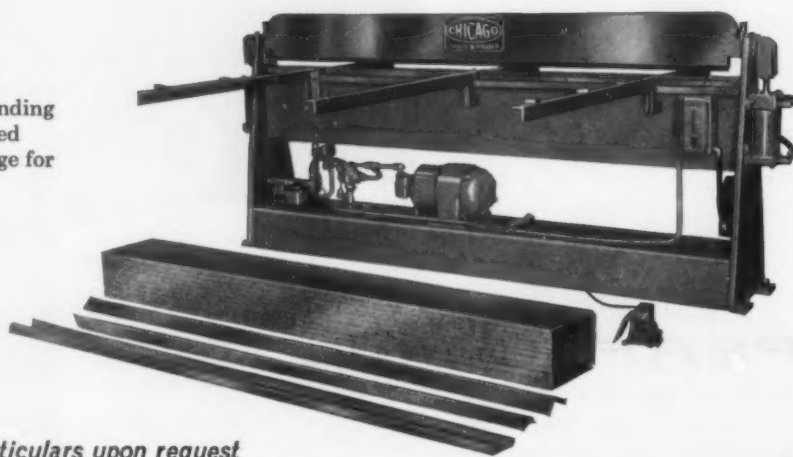
Step-Control Featured On Electric Furnace

ELECTRIC FURNACE models for utility room and suspended application are available in a capacity range of 34,000 to 68,000 Btuh. The utility room furnace features a low-voltage thermostat, quiet step-control panel, and an oversized blower. Return air ducts can be attached to either side or at the bottom. — *Thermo-Products, Inc., North Judson, Ind.*

Production Bending for duct sections and long, light-gauge work

CHICAGO® SPEED-BENDER

- 8 feet of 24-gauge or 5 feet of 20-gauge galvanized steel
- Adjustable front gauges; disappearing pin gauges for bending from notches; and spring-loaded gauge pins to make ¼-inch edge for Pittsburgh lock
- Hydraulic operation
- Foot-switch control
- Two-position foot switch can be supplied for 90° bends and for shallow bends as in cross-braking



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The Blouin firm has been the sheetmetal contractor for some of New England's most imposing buildings. Whether on the job or prefabricating materials in one of the nation's most modern shops, Blouin employees rely on durable Wiss Snips for efficient, precision cutting. Why don't you too?



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Metal-Master



Solid-Steel

WISS INLAID BLADE SNIPS cut with lasting sharpness, tremendous power. High carbon crucible steel blades, welded to hot drop-forged frames. Complete range of sizes, 11½" to 17". Models: straight cutting, circular cutting, curved blades, and bulldog notching.

WISS METAL-MASTER AVIATION SNIPS, with amazing compound action, cut with half the effort required by conventional snips! They are preferred by many for their compact size, and ability to make intricate cuts. Left, right and straight cutting models, only 9¾" long, cuts 18 gauge metal. Bulldog combination model, 9¾" long, cuts 16 gauge stainless steel!

WISS SOLID STEEL SNIPS, made from a special grade of solid tool steel, are available in straight cutting, circular cutting and bulldog models from 7" to 16". Priced slightly lower than inlaid snips.

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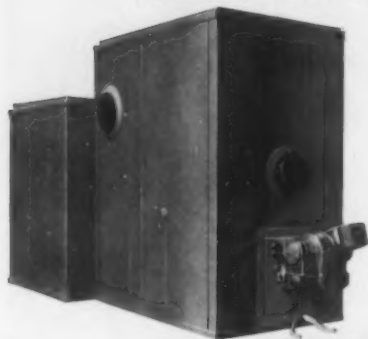
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3,800,000 Btuh



Oil-fired Powered tubular model with separate blower cabinet.

Powered model with cabinet enclosing both burner and blower.



For Commercial, Industrial, and Institutional heating jobs calling for fast response and positive control, look to Jackson & Church for time-tested Powered furnaces. The famous tubular design has been engineered for an even better draft condition. Electronic safety controls are standard on most Powered models. Outputs 208,000 to 3,800,000 Btuh for oil, gas, dual fuels, or stoker firing. Don't miss the BIG opportunities this BIG line offers. Specifications and full details on request. Write today.

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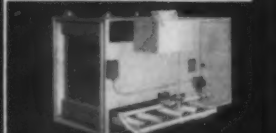
AMERICA'S LARGEST AND MOST COMPLETE WARM AIR FURNACE LINE.



Direct-Fired Unit Heater, Floor-mounted, suspended, inverted models—400,000 to 4,000,000 Btuh output. Oil, gas or dual fuel.



12 Oil-Fired Suspended models, 123,000 to 1,000,000 Btuh output.



11 Gas-Fired Suspended models, 160,000 to 320,000 Btuh output.

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equipment developments

(Continued)

Compact Design, Economy In Two-way Mobile Radio

15-WATT, COMPACT two-way mobile radios are designed for operation in low band (27-50 mc.) and high band (150-174 mc.), the units have full-quality VHF-FM audio.

According to the manufacturer, the "Pacer" has 15 tubes and 2 transistors, providing more power and larger communications range. The control section contains a transistorized power supply adaptable to 12 volt electrical systems. The model, 4 1/4 x 7 3/4 x 12 1/2 in. fits under the dash of small vehicles without cramping passengers.

Lightweight, aluminum construction is used; the radio weighs 10 lbs., including a microphone and built-in speaker. A filter in the receiver is designed to lower susceptibility to ignition noise, resulting in quieter communications with better voice quality—General Electric Communication Products Dept., Lynchburg, Va.

Thermostatic Expansion Valve Offers Pressure Limiting Features

THERMOSTATIC EXPANSION VALVE, model Detroit 900, combines compact design high-capacity performance. Available in both internally and externally equalized and pressure-limiting types, it is designed for both original equipment and air conditioning replacement installations.

Used with R-12 or R-22 refrigerants, the valve is available with custom-charged "C" or "Z" power elements. Rated capacity is: R-12 — 0.5 to 3 tons; R-22 — 0.8 to 5 tons.

Constructed of stainless steel, the small, removable power element is shielded-arc welded to achieve full diaphragm flexibility.

According to the manufacturer, the valve body is of high density brass forging; its inlet location and minimum number of moving parts (three) permit full, free flow of refrigerant through the valve to provide high capacity. A large inlet strainer, held in position by a retainer clip, is removable for cleaning. Ball needle and push rod, with ball concentric to rod, are self-aligning and self-centering to assure accurate seating.

For replacement applications, the Detroit 900 is said to provide equivalent capacity and can be installed without repiping. The manufacturer also announces adoption of a simplified, five-digit numbering system for the valve for quick, easy product identification and reference for the user—American Standard Controls Div., 5900 Trumbull Ave., Detroit 8, Mich.

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equipment developments

(Continued)

Water Neutralized Flux for Shop Use

"MAYOLYTE," flux suspends surface oxide on steel, copper, brass, and galvanized iron. Its compound action inhibits oxidization, and at the same time, wets through and dissolves oil and grease. Flux is not limited in strength and will react under any conditions, and is readily neutralized with and soluble in water, according to the manufacturer — *Farrelloy Co.*, 1258 North 26th St., Philadelphia 21, Pa.

Extruded Aluminum for Register, Grille Use

EXTRUDED ALUMINUM registers and grilles are designed to resist rusting, pitting, or corrosion; aluminum extrusions are employed

throughout the construction. Faces of the registers and grilles are etched to a soft satin finish, and coated with a protective acrylic coating.

According to the manufacturer, the prime coat finish is adaptable for decorating schemes without danger of "bleedthrough" — *Hart & Cooley Mfg. Co.*, 500 E. Eighth St., Holland, Mich.

Cleans Inside of Refrigeration Systems

DESIGNED FOR cleaning the inside of cooling systems from 5 tons or smaller, "The System Cleaner" has a manifold bank of filters and driers that are interchangeable from 8 to 60 cu in. with a 50 gal per hour circulator. According to the manufacturer, the cleaner will perform at temperatures up to 110 F.

The process uses Refrigerant 11 as a cleaning agent at 40 lb pressure. The cleaning agent passes

through a perforated cylinder filled with a special filtering media which catches particles of sludge and carbon caused by burn outs. Reverse flow valves permit back washing of the system.

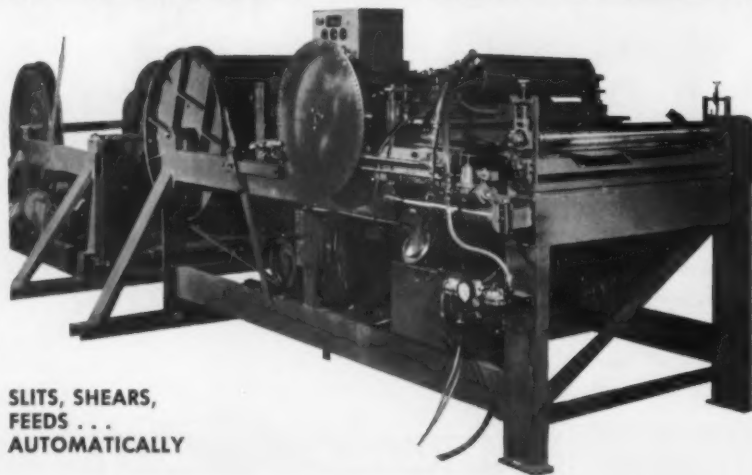
The cleaner is of portable construction with aluminum base mounted on rubber pads. A drain valve is provided so that flexible hose or tubing can be connected — *Hermetic Parts, Inc.*, 901 Ross Ave., Wausau, Wis.

Easy-to-Clean Filter Stops Pilot Clogging

EASY TO CLEAN gas filter is designed to prevent clogging of furnace pilots by eliminating dirt, pipe scale, or other foreign matter from natural gas pipe lines.

For cleaning, one bolt loosens the two aluminum sections, and the filter element can be washed in plain water with a detergent. The filter is available in two standard pipe sizes ($\frac{3}{4}$ in. and 1 in.), female threaded inlet and outlet.

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FEEDS . . .
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Imagine blanking out 12,000 elbow blanks per hour. WELTY-WAY'S NEW SLEAR does! WELTY-WAY feeds metal of any length . . . cut to the exact $\frac{1}{16}$ inch . . . into your fabrication machine. It supports metal coil, evenly feeds metal, pulls metal from coil, levels it, slits it, shears it, moves it through the shear and feeds it into your fabrication machine. WELTY-WAY increases production more than 50% while reducing labor cost!

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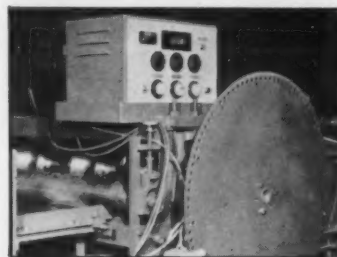
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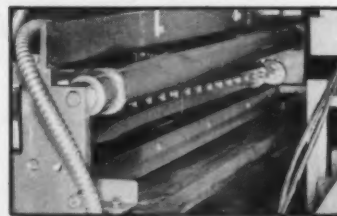
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Cedar Rapids, Iowa

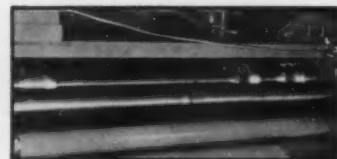
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Thank you, 74%

Good news! When we surveyed air-conditioning dealers in 21 cities last summer, we found that 74% knew of our Certification program. More important: 6 out of 10 familiar with the program *use it in their selling.*

Thus, in less than two years, air-conditioning dealers have demonstrated their enthusiasm for ARI certification. Many have thought up ingenious ways to sell with the program—and we're delighted.

But we won't rest on our laurels. Dealers kept telling us they'd like a sales piece that would explain the ARI Certification program to their customers, so we designed "How to

Buy Central Air-Conditioning." It tells consumers the whys and hows of air conditioning, outlines the Certification program, suggests why air conditioning should not be bought on the basis of price alone. For a sample copy, write (on your letterhead, please) ARI.



AIR CONDITIONING AND REFRIGERATION INSTITUTE

Department C-412, 1346 Connecticut Ave., N.W., Washington, D.C.

equipment developments

(Continued)

Maximum safe operating pressure is 125 psi — *Air-Maze Div., Rockwell-Standard Corp., 25000 Miles Road, Cleveland 28, O.*

Double Duct, High Velocity Air Blender

THREE NEW products have been added to the company air conditioning line. "Twin Duct Air Blender" is designed for high velocity, double duct air conditioning. Adaptable for ceiling and under window installation, the blenders operate without use of motors, piston separators, or mechanical linkage. Uses single fan system to heat, cool, clean, humidify, and dehumidify the air, and can be used for both interior and exterior zones.

"Roofair" is a rooftop unit designed for cooling and dehumidifi-

cation. Six models are available with a cooling capacity range of from 5 to 35 tons. Unit is self-contained package shipped as single pieces completely factory wired, piped, and charged with refrigerant.

Series "600" centriflow ventilating fans are designed for smooth and unrestricted air flow, high efficiency, and quiet operation through use of backwardly inclined blower wheel design. All-welded housing is standard on all fans — *Worthington Corp., Harrison, N. J.*

Use Continuous Current For AC-DC Welder

FEATURES of the "Miller MD Welder" include continuous current control; open circuit of 80 volts in both a-c and d-c models, plus wide welding currents for each; straight or reverse d-c polarity; and a semi-metallic rectifier.

The welder is offered in 300,

400, and 500 amp sizes. Additional features include forced draft ventilation, dead front construction, and a sturdy, drip-proof cabinet — *Miller Electric Mfg. Co., Inc., 718 S. Bounds St., Appleton, Wis.*

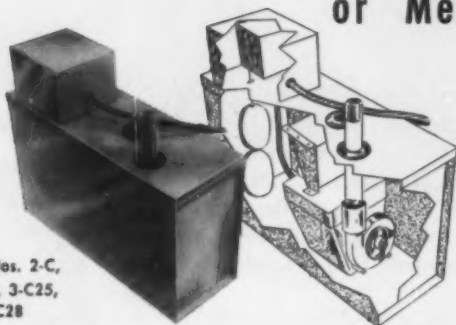
Thermal Rod Controls Electric Furnace Coils

THERMAL ROD control replaces bi-metal strips to provide the necessary time delay in turning on the different heating elements for sequence control of electric heating furnaces. The stainless steel thermal rod is heated by a small electric coil activated by the room thermostat. When the rod becomes elongated from the heat, it closes a switch on the main circuit.

The manufacturer-listed advantages include operation which is not affected by variations in the ambient temperature, compact design, and stability of calibration — *Controls Company of America, 9655 Soreng Ave., Schiller Park, Ill.*

LITTLE GIANT CONDENSATE UNITS...

designed to fit any Air-Conditioning
or Mechanical Refrigeration Unit!



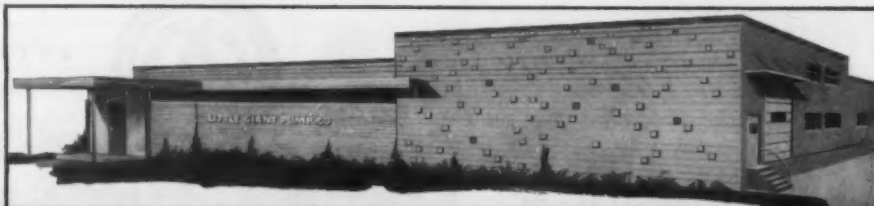
Col. Nos. 2-C,
3-C20, 3-C25,
4-C28

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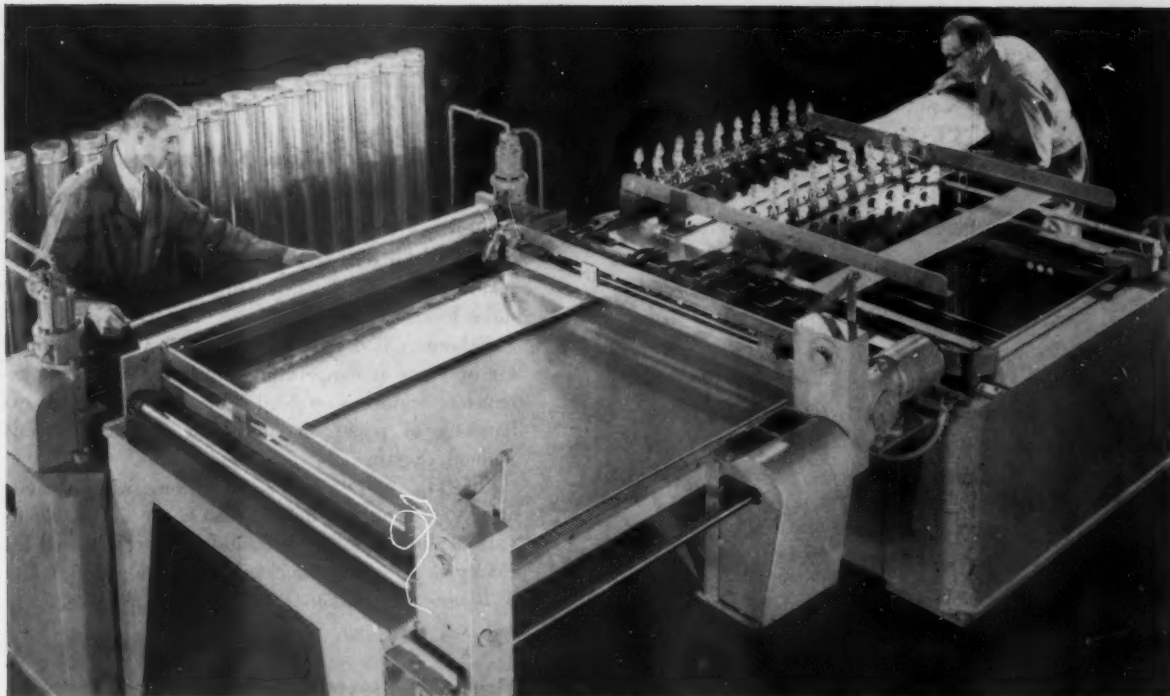
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Small and compact, this little Giant condensate unit is the most economical on the market. Superior design and quality make it the one most preferred by air-conditioning manufacturers and distributors. Solve your condensate problems by installing a Little Giant Condensate unit.

Write for information about our shallow pan condensate units, designed especially for installations where minimum height is important.



New Home of Little Giant Pump Co. • Triple Production Capacity To Meet Increasing Demand



Maplewood H-60 Special Air-Operated 5' Roller Machine, G-924 Panel-Type Snap-Lock Machine, and Automatic Intermediate Feed Table combined as a single production unit.

New Maplewood **AUTOMATIC INTERMEDIATE FEED TABLE**

Cuts Pipe and Duct Fabricating Costs!

- Automatic Transfer of Panels Produces More Pipe and Duct Sections per Hour.
- Snap-Lock and Roller Machines Operate at Maximum High Speeds.

The new Maplewood intermediate table automatically transfers panels from the snap-lock machine to the roller machine, and makes possible snap-lock forming, rolling, beading and crimping in one continuous high-speed automatic operation.

Call a Maplewood engineer for full details on adapting this automatic feed table to your operations, and ask him to propose equipment for greatly reducing your costs. No obligation of course.

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ROLL FORMING MACHINES

DIVISION OF ROCKFORD MACHINE TOOL CO.
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National Angle Rings can readily help you get the jump on time-consuming ring jobs. Because these rings are rolled accurately by experts, they are **UNIFORM IN CURVATURE**. This means that there is no lost motion, no costly fitting time required — in your shop or on the job site.

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equipment developments *(Continued)*

High Efficiency, Low Noise Level In Backward Inclined Blade Fan

A LINE OF backward inclined blade fans has been developed for dust collection, ventilating, and general plant usage, and features high efficiency and low noise level.

Exhauster is designed to handle clean or dust-filled air or gases at temperatures up to 600 F. These exhausters feature all-welded mild steel wheels for exhausting of paper shavings and similar materials without clogging.

Offering vibration-free operation, with various drive arrangements, the exhausters are adjustable to various discharge locations, and can be assembled for clockwise or counter-clockwise rotation—*Lehigh Fan & Blower Div., Fuller Co., Catasauqua, Pa.*

Manual Selector Gives Electronic Air Cleaner Variety of Capacities

ELECTRONIC AIR CLEANER, Model UMT, with broad range capacity selector located on the power pack, is adaptable to heating systems ranging from 80,000 to 200,000 Btuh capacity, or cooling systems of 2 to 5 ton capacity. The unit is designed to remove dirt, dust, smoke, and other airborne contaminants from the air.

Model UMT can be floor mounted or suspended in the ductwork. It is adaptable to horizontal or vertical air flow requirements, and is interchangeable for either right or left hand installation. In cleaning, cells need not be removed.

According to the manufacturer, particles as small as 1/2,500,000 of an inch are removed from the air. Applications recommended are residential and small commercial establishments—*Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.*

Portable Nibbler Designed For Heavy Duty Operations

PORTABLE HEAVY DUTY nibbler (No. 691) operates on a punch-and-die principle and develops pressure of a 2 ton punch press suitable for sheet steel up to 8 gage. Net weight is 16 1/4 lbs. Also cuts stainless and monel of lighter gages; copper sheet up to 3/16 in.

When fed along the cutting line, nibbler will punch out small rectangular pieces and leave a smooth edge, without bending or curling the metal on either side of the cut, according to the manufacturer.

Compact, sturdy housing, with heavy duty ball, roller, and needle bearings, are used for long life.

equipment developments (Continued)

Designed for efficient service, the nibbler is equipped with heat-treated gears and nitrated stripper, and a carbide die.

"Over-the-top" grip handle, with an instant-release trigger switch, is positioned for balance and one hand operation. An auxiliary front T-handle improves control and accuracy on continuous work.

To increase punch and die life, an automatic oiler lubricates the working parts—*Black & Decker, Pennsylvania Ave., Towson 4, Md.*

Low Noise, High Insulation Value Offered by Round Glass Fiber Duct

PREFABRICATED DUCT, molded from fine glass fibers and encased with air-tight vapor barrier, is manufactured to the same inside diameters as standard galvanized round sheet metal ducts. "Armoglas Duct" provides thermal insulation and, in place, the material offers a noise level reduction of 2 to 3 db/ft, according to the manufacturer.

Duct is furnished in 6 ft sections, ready for installation with standard galvanized sheet metal fittings regularly used with round sheet metal ducts.

The duct has a k factor of 0.22 at 75 F mean temperature. The duct is suited for attic installation of self-contained central air conditioning units—*Armstrong Cork Co., 4404 Concord St., Lancaster, Pa.*

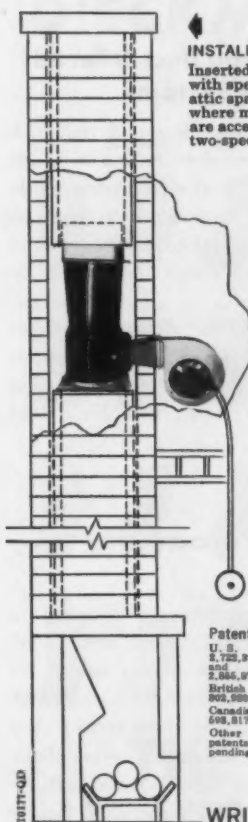
Hermetic Compressor Meets Package Equipment Needs

HERMETIC COMPRESSOR (Model D) is designed for installation in package equipment requiring 5 and 7½ ton refrigeration. The 5 ton model has three and the 7½ ton unit four cylinders. Aluminum connecting rods and pistons are said to reduce unbalance.

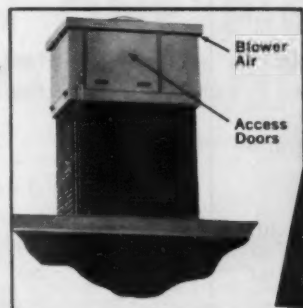
Ductile iron crankshaft, induction hardened main and pin journals, plated valves, are designed to reduce wear. To isolate vibrations, the compressor is floated by internal vibration isolators within stationary outer shell, eliminating need for external isolators.

Other features listed include short stroke piston movement, large bore compression chambers, balanced crankshaft and rotor, anti-slugging valve which releases pressure if liquid refrigerant enters compression chambers, built-in suction and discharge mufflers designed for quiet operation.


Suction gas passing directly through rotor and stator windings reduces motor winding heat, according to the company. Regulator maintains constant



INSTALLATION NO. 1
Inserted directly in chimney with special fittings in attic space or outside where motor and blower are accessible. Single or two-speed motor available.



INSTALLATION NO. 2
On top of round, square or rectangular chimney in aluminum steel housing. Can be used for fireplaces but usually installed for furnaces, boilers and incinerators.



Quickdraft power-draft units make fires burn brighter. Furnaces, boilers, hot water heaters and incinerators operate with higher efficiency. Perfect draft control ensures more efficient combustion and complete removal of smoke, poisonous fumes and dust. **MAINTENANCE IS MINIMIZED BECAUSE THERE ARE NO MOVING PARTS IN EXHAUST LINE.** Domestic and industrial units are available in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24 and 30-inch sizes.

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Canadian
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equipment developments

(Continued)

oil pump pressure. A sight glass is provided for checking oil pump operation.

The compressor will be used in package equipment for small commercial and residential applications—*The Trane Co., La Crosse, Wisc.*

Die-formed Fan Blades Provide Roof Ventilator with Quiet Operation

DIRECT DRIVE CENTRIFUGAL roof ventilators, model CRD, are made in eight wheel sizes with capacities from 194 to 2788 cfm at free delivery. Models are equipped with ball motor bearings and are mounted in rubber for quiet operation.

The fan wheel is fabricated of aluminum, and is the backward inclined, non-overloading type. Blades are die-formed and mounted between a heavy-duty backplate and a die-formed rim. The deep-spun streamlined inlet is specially designed to introduce exhaust air to the wheel with minimum turbulence, according to the manufacturer.

The fan wheel housing is aluminum and produced in three sizes which accommodate the eight wheel sizes; the motor hood is of spun aluminum—*American-Standard Industrial Div., Detroit 32, Mich.*

Insulated Prefabricated Duct Offered For Extended Plenum Systems

"G-B DUCT" IS A PREFABRICATED round duct that combines thermal and acoustical insulation with reliable air distribution characteristics, according to the manufacturer. The duct is engineered to meet all normal insulation and condensation requirements of year 'round air conditioning installations using extended plenums.

Available in 6 ft sections, the duct offers resilience and ability to take abuse during installation. Only standard sheet metal fittings are required for assembly—*Gustin-Bacon Mfg. Co., 210 West 10th St., Kansas City 7, Mo.*

Combustion Detector Reacts Only to Flame Rays

"LUXRAY" COMBUSTION DETECTOR is designed to offer instantaneous reaction to radiant rays of oil flames. It can be installed in the blower end of the burner where operation is unaffected by foreign matter. The non-electronic, burner-mounted control does not react to the radiant heat of the combustion chamber or the ignition spark, but only to flame rays.

Model CT-97 may be used in burners on various

equipment developments

(Continued)

types of furnaces with different kinds of combustion chambers. The R-96 relay used in the system may be either burner or remote mounted—*General Controls Co.*, 801 Allen Ave., Glendale 1, Calif.

Free-standing Metal Fireplace For Use with Prefabricated Chimney

"REGENCY" FREE-STANDING fireplace, 52 in. high (less flue) is a see-through design, with removable panels of 1/4 in.-thick heat-resistant plate glass on three sides and the fourth side enclosed by a black mesh firescreen.

The hearth, standing 12 in. off the floor, surrounds the fire on all sides. The hearth is made up of simulated ceramic tiles of porcelain-enameled steel, 8 1/2 in. square, attached to the steel framing of the fireplace unit.

A star-shaped, sloping hood, 43 in. wide, covers the firebox area and joins a 10 in. square flue housing that contains an 8 in. round steel flue. Designed to accommodate varying ceiling heights, the flue is installed for venting directly through a ceiling or elbowing into a class "A" masonry or all-metal prefabricated chimney. A sliding collar fits over the

upper part of the flue to form a gas tight fit.

Accessories include venting elbows, flue and flue housing sections, a power draft, and insulated steel panels to replace glass panels. Deeptone grey wrinkle enamel finish is baked onto the hood and flue housing and can be painted to harmonize with interior decor—*Majestic Co., Inc.*, 733 Erie St., Hauntington, Ind.

Aluminum Fluxless Solder Melts At Ordinary Soldering Temperatures

"TIN-A-LUM" SOLDER can be used with almost any type heat except a flame of sooty nature to most types of metals except black or cast iron. No fluxes or soldering fluids are necessary, according to the manufacturer. The material to be joined or repaired is heated to approximately 210 C, and the solder is applied; the temperature in the material melts or fuses "Tin-A-Lum" to the parent metals.

The use of a soldering iron is said by the manufacturer to lessen corrosion; this is due to a process used in the manufacture of the solder.

Tests show that the main cause of corrosion has been found to be overheating of parent metals of conductor pipes and gutters; this solder has been designed to remove the cause of deterioration—*Metals For Industry, Inc.*, 299 Pavonia Ave., Jersey City 2, N. J.

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new literature . . .

Multipurpose Machines Perform Punching, Shearing, Other Operations

STATIONARY "HYDRAMIC" PRESSES for multipurpose operations are said to be particularly applicable for short-run work and on jobs where punching must be done to center punch marks because expensive gaging would not be warranted. The operator has full control over the ram, according to the company, making it possible for him to inch it down or up. In addition to punching round holes in sheet metal, angle iron, channel iron and other structural shapes, the company states, machines will punch round, square, oval, rectangular, triangular, hexagonal and odd shapes in steel, aluminum, copper, brass and other materials. They can also be adapted to shearing, notching, cutting off and forming operations—*W. A. Whitney Mfg. Co., 636 Race St., Rockford, Ill.*

Remote Air Conditioning Units Available in a Variety of Models

FULL COLOR CATALOG (20 pages) describes "Fedair Type F" remote air conditioning units. Included in the line are free standing, recessed, overhead and recessed overhead models—*Heating Div., Fedders Corp., Lalor & Hancock St., Trenton 7, N.J.*

Heavy Duty Oil-Gas Heaters Are Versatile, Compact in Design

BROCHURE PROVIDES INFORMATION on combination oil-gas industrial heaters. Included are descriptions, technical data and application photos of various models available. Charts show blower performance of units ranging from 280,000 to 1,000,000 Btuh. Tables provide dimensional data, air handling capacities, heat exchanger area, motor hp, etc. One page is devoted to diagrams showing various arrangements possible when auxiliary equipment is added—*Lennox Industries Inc., 200 S. 12th Ave., Marshalltown, Iowa*

Cast Iron Utility Fans Are Used For Ventilation and Exhaust Work

BULLETIN No. 89 (four pages) describes belt driven and direct motor driven cast iron fans with steel forward curve blast wheel. Fans are designed for all types of ventilation and exhaust work. Also described are forward curve fans for ventilation in locations requiring very quiet operation; ventilating fans for restaurants, hotels, theaters, etc.; and attic fans for residential applications—*The Champion Blower and Forge Co., Lancaster, Pa.*

Ceiling Air Diffuser Features Four-Way Diffusion

DATA SHEET covers "Model C" multi-louver ceiling air diffuser for heating and air conditioning applications. According to the company, diffuser may be used for either wall or baseboard perimeter installations. Features including four-way diffusion; all steel construction; baked enamel finish; sponge rubber gaskets; and one-piece face. Three models are available for use with ducts 10×6 in., 12×6 in., and 14×6 in.—*Standard Stamping & Perforating Co., 3109 W. 49th Pl., Chicago 32, Ill.*

Gives Data on Power Roof Ventilators, Accessories

BULLETIN DB3-200 (superseding bulletins 2701 and 2701S) contains information on power roof ventilators, including dimensions, capacities, sound classifications, etc. Also described are accessories such as shutters, dampers, disconnect switch and receptacle, and air relief vents. Wall exhaust fans are also covered—*Ilg Electric Ventilating Co., 2850 N. Pulaski Rd., Chicago 41.*

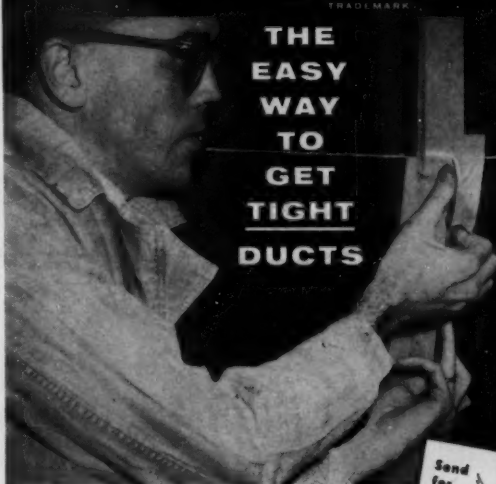
Handbook Includes Data on Large Diameter, Commercial Size Gas Vents

"GAS VENT TABLES AND HANDBOOK" (for capacities to 10 million Btuh) presents data on Type B gas vents in sizes 3 through 24 inches. According to the company, data given on large diameter, commercial size vents has not previously been available to the industry. In addition to capacity tables, booklet includes discussions on such subjects as Multi-Story Application and Design, Air Supply Methods, and Combined Vent Design. The handbook supersedes "Safety System Tables" previously published by the company—*William Wallace Co., Metalbestos Div., Belmont, Calif.*

Molded Plastic Tanks, Other Products Withstand Effects of Corrosion

MOLDED PLASTIC TANKS for corrosive applications are described in a four-page, illustrated folder. Advantages of the tanks (available in capacities up to 350 gallons) include low price, durability, high thermal stability, light weight, and easy cleaning. According to the company, polyethylene is tasteless, odorless, non-toxic and chemically inert, even under the action of such corrosive materials as concentrated hydrofluoric and hydrochloric acids, concentrated

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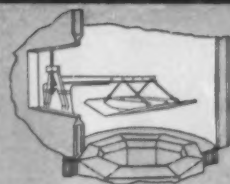
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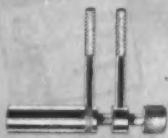
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OIL BURNER
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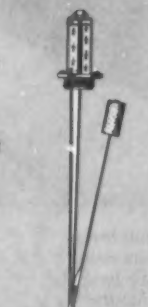
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Ideal
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BOSMACO
Apthorp NOZZLE KIT

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

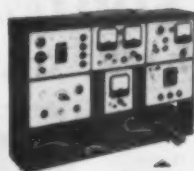


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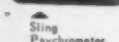
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new literature

(Continued)

sodium hydroxide and alkaline solutions. In addition to tanks, company offers ventilator exhaust ducts, acid troughs, roof ventilator shields and other products—*American Agile Corp., P. O. Box 168, Bedford, O.*

Blowers for Air Supply and Exhaust Applications Feature Quiet Operation

"DESIGN 10" BLOWERS for air supply and exhaust in air conditioning, ventilating, industrial processing or mechanical draft applications are described in bulletin A-104S. Blowers are designed to operate at low hp requirements, permitting use of smaller motors and thus reducing power consumption. According to the manufacturer, hollow airfoil shaped blades provide quieter operation and increase operating efficiencies—*Chicago Blower Corp., 9867 Pacific Ave., Franklin Park, Ill.*

Roof Drainage Material Helps Dealer Build Customer Good Will

CLIP SHEET contains roof drainage news items suitable for mailing to editors of newspaper home pages. Typical heads are "Gutter Work Needs a Professional," "Varied Types and Styles in Gutters," "Dry Basement Starts at Roofline," "Proper Roof Drainage System Adds Value to Your House," and "Garages Need Roof Drainage Too." Also available is a consumer mailing piece titled "Painting of Roof Drainage Products," which tells the homeowner how to paint galvanized iron, aluminum, stainless steel, tin or terne, and copper—*Roof Drainage Manufacturers Institute, 22 W. Monroe St., Chicago 3.*

Residential Gas Air Conditioners Feature Simplicity of Operation

"SUN VALLEY" year 'round gas air conditioning equipment is described in an eight-page brochure illustrated with product photos and dimensional drawings. According to the company, because no moving parts are used in the heating-cooling cycle, friction wear is eliminated, assuring dependable operation, vibrationless performance, and long service life. Specifications are given for models 500, 750 and 750H. Also available are data sheets covering: 1) Series 650 year 'round gas air conditioner; 2) Series D500 gas operated year 'round air conditioner; and 3) Model FCF-42-96V fan-coil-filter assembly—*Arkla Air Conditioning Corp., 812 Main St., Little Rock, Ark.*

we hear that . . .

► SILENT AUTOMATIC PRODUCTS recently held a four-day workshop conference for district sales managers. Speakers discussed selling techniques; new sales promotion tools; new films, tapes and scripts; management guides for dealer-contractors and distributors; and a new advertising program. Pierce V. Burke, company sales manager, explained that the various sales aids and services offered by the firm should be tailored by the district sales managers "to fit the specific needs of each individual dealer-contractor or distributor."

► J. G. BROWNLEE was winner of the "Star Salesman" contest recently conducted by Stewart-Warner Corp.'s Heating and Air Conditioning Div. Mr. Brownlee, central Indiana district sales manager, received a Chevrolet Impala convertible for producing the greatest sales increase over quota.

► O'NEIL-IRWIN MFG. Co. has changed its name to Di-Acro Corp. According to Gunnar H. Danielson, president, "The change comes quite naturally, since our Di-Acro brand name has been promoted through the years far more extensively than our corporate name." The name, Di-Acro, comes from the term "die-accuracy without dies," which was one of the company's early marketing themes.

► QUICK CREDIT APPROVALS and convenient monthly terms are features of a plan offered by Lennox Industries, Inc. to finance consumer purchases of heating and air conditioning equipment. The plan utilizes many of the installment selling techniques used in the purchase of automobiles, home and property improvement, pleasure boats, farm machinery and other items.

► C. W. COKER has been named president of Sonoco Products Co., succeeding James L. Coker III, who died early this year. The new president began work with the company in 1930 in the production department. He was elected vice president in 1931 and executive vice president in 1950. He is the grandson of the firm's founder.

► THE LAU BLOWER Co., has purchased the Meier Electric and Machine Co., Indianapolis. The Meier firm will be operated as the Meier Div., The Lau Blower Co., according to T. I. Byrd, president of the Lau company.

► DEALER-CONTRACTORS recently previewed the Johnson Furnace Co.'s "Aire-Ease" heating and cool-

FLANGES THE DUCT with Amazing Speed!

Less than 5 seconds on short
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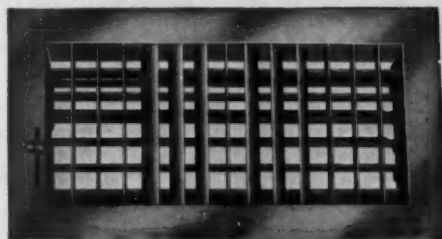
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ing equipment and unit heaters at a showing held in Detroit. Among the new products on display were condensing units; 60,000 Btuh gas-fired highboy and counterflow furnaces; and a 200,000 Btuh basement model, which is shipped assembled and wired in two sections. Also displayed were new unit heaters featuring a fan mounted on top and louvers that may be installed in the front or bottom of the unit. "Aire-Ease" units will be stocked and distributed in the Detroit area by the Star Steel Supply Co., 3855 E. Outer Dr., Detroit.

► **GENERAL CONTROLS Co.** has established a scholarship at Stanford University in memory of the late William R. Ray, one of the firm's founders. The scholarship makes \$1000 available each year to a student specializing or planning to specialize in engineering, science, physics, chemistry, electronics or allied technical fields.

The company's Denver office personnel recently moved into new headquarters located at 2323 W. 2nd Ave.

► **SONOCO PRODUCTS Co.** has opened a branch plant and sales office in Ravenna, Ohio. J. L. Henderson was named branch plant manager.

► **SYDNEY ANDERSON** has been appointed vice president in charge of West Coast operations for Typhoon Air Conditioning Div., Hupp Corp. Mr. Anderson will supervise operations in California, Arizona and Nevada, operating from the firm's factory branch in Los Angeles.

► **INDUSTRIAL STAINLESS STEEL, INC.**, a subsidiary of Eastern Stainless Steel Corp., has begun construction of a 40,000 sq ft steel warehousing building. The new warehouse, located at Sixth and Binney Sts., Cambridge, Mass., will contain four 5-ton electric cranes, shears and other cutting equipment for processing stainless steel sheets to customer requirements.

► A "GOLDEN REGISTER" was displayed at the recent International Heating & Air Conditioning Exposition by Auer Register Co. Officials explained that the gold plated register was the millionth "Perfusaire" model to come off the company's production line.

► **FEATURE** of Bryant Mfg. Co.'s annual sales conference held recently at Miami Beach was the introduction of several new products including large size unit heaters (250,000 and 300,000 Btuh); direct

drive cooling blowers; duct heaters with blower packages; the "Weather-Probe," designed to provide quieter night operation of an air conditioner by automatically reducing blower speed when outdoor temperatures drop; a 2-ton remote air conditioner; and a glass-lined water heater.

The company recently opened a new branch operation in Pittsburgh which will serve the greater Pittsburgh areas as well as counties within a 125-mile radius. Albion W. Frazier was named to manage the new branch.

► **DELCO APPLIANCE DIV.** of General Motors Corp. recently opened a new laboratory for the development and testing of home conditioning equipment. The new testing facility, located at the division's main plant in Rochester, N.Y., occupies approximately 4000 sq ft of floor area, is designed for future expansion.

► **A 10,000 SQ FT BUILDING** has been leased by Jet-Heat Inc., Englewood, N.J. The new plant will provide additional manufacturing facilities, will also be used as a showroom for operating displays and as a sales and service training school.

► **McQUAY, INC.** has begun construction of a new West Coast manufacturing plant at Visalia, Calif. Harold T. Hunt has been appointed manager of the new plant.

► **A. J. HOWETH and EARL KURTZ**, Houston dealer-contractors, have merged operations and will operate under the name of Central Heating and Air Conditioning Co. Mr. Howeth is president and Mr. Kurtz vice president of the new operation. Offices are at 1420 N. Rice, Houston.

► **MODERN CONTROLS CORP.**, Centerline, Mich., has purchased Handley-Brown Co.'s entire stock of gas conversion burners and service parts. According to John Cantu, president of Modern Controls, all rights to name and patents have also been purchased by his company, and Handley-Brown burners will now be produced by Modern Controls at the latter's plant in Centerline.

► **SALES, SERVICE AND ENGINEERING** departments of Motor Wheel Corp.'s Consumer Products Div. have moved into the firm's new plant at LaGrange, Ind.

► **STANLEY ELECTRIC TOOLS**, Div. of The Stanley Works, has changed its name to Stanley Power Tools.



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THE BLOW PIPE SUPPLY HOUSE

- ONE-PIECE BLOW PIPE ELBOWS
- BALL JOINTS • HOODS
- FLOOR SWEEPS • FLEXIBLE TUBING
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From one source you can get all types of blow pipe parts and components . . . made in production quantities by Kirk & Blum.

Depend on K & B manufacturing experience for superior blow pipe parts at less cost than hand made parts.

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insulation, helps
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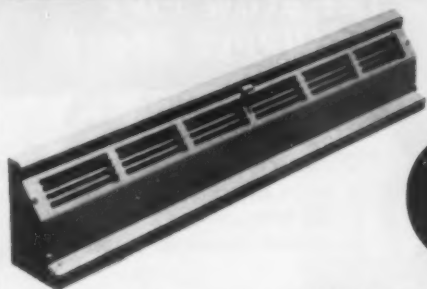
When insulation materials require fast, labor-saving, positive, permanent anchoring, plus eliminating the necessity of drilling or punching, you can't go wrong by using proven, tested, Stic-Klip Fasteners and Adhesive.

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ATLAS # 761



**4
Sizes**

BASEBOARD DIFFUSERS

Atlas #761 Baseboard Diffusers available in 4 sizes — 18", 24", 36", & 48", — High output and throw — outstanding pattern for both heating and cooling. Installed with minimum labor — rugged construction that resists dents. A quality product at a competitive price — Immediate shipments — Also available in WHITE!

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LOCAL
WHOLESALE
OR
WRITE

J. B. SMITH COMPANY,

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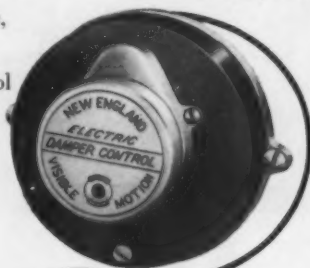
EASY To Install

First time electrically controlled dampers ALREADY IN THE PIPE 4" — 5" & 6" Round Duct Sets, felt edged damper blade, position indicator and Damper Control mounted on short length of duct.

**NO CUTTING
NO FITTING
LOW COST**

Damper Control only, for square or rectangular duct available. Power enough for industrial installations.

7½ Inch pounds of torque



Write or phone
NEW ENGLAND GEAR WORKS, INC.
Southington, Connecticut
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wholesaler doings . .

► THE FRANK J. KERSCHER Co., Manitowoc, Wis., wholesaler, recently entertained 85 Stewart-Warner heating and air conditioning dealer-contractors and their wives at the Hotel Manitowoc. Speakers included Walter Blake, sales manager of Stewart-Warner's heating and air conditioning division, who discussed "It's a Selling Job in 1961;" Carl Lang, general service manager; and Buddy Garrison, training director for Stewart-Warner.

Vincent J. Kerscher presented the "Dealer of the Year" certificate to Elmer Beltz, Beltz Heating, Medford, Wis., and 10 other achievement awards to dealer-contractors who ranked next highest in sales scores. An honored guest at the meeting was Larry Ebert, sports announcer of WFRV-TV channel 5. Mr. Ebert handles the Kerscher Company's Wednesday evening program promoting Stewart-Warner dealer-contractors and the equipment they sell.

► THE BRYANT-HEDBACK Co. recently completed a 4000 sq ft addition to its offices in Indianapolis. The new building houses a reception room, general and executive offices, engineering, parts and service facilities, the order department and a dealer-contractor school room. Phil Hedback, owner of the firm, says: "We designed the addition with expansion in mind. It's part of our philosophy to prepare for the future — to keep the company progressing and able to serve our hundreds of dealer-contractors just as efficiently as we did 15 years ago when we had only a few." The new addition brings floor space to a total of 18,000 sq ft.

► J. A. WALSH & Co., Houston, has been appointed exclusive distributor of air conditioning and heat pump products of Typhoon Air Conditioning and Typhoon Heat Pump Divisions, Hupp Corp. The Walsh company, founded in 1936, is headed by James A. Walsh. William Boland, formerly district sales manager for Typhoon in the Houston area, heads the air conditioning division.

► HOW DOES A WHOLESALE conduct a prize contest among dealer-contractors to stimulate sales for a particular product on the local level? Here's how Star Steel Supply Co., Detroit heating and air conditioning distributor, organized and conducted a contest of this type.

The manufacturer of the equipment to be promoted approved the wholesaler's plan, and it was agreed that the program would be paid for out of co-op funds.

Grand prize in the contest was to be an all-expense, seven-day trip to Miami for two people. Win-

ners would be flown to Florida by jet, would stay at the Americana Hotel, and would also receive \$200 in cash for spending money. In addition, they would have private use of a 42 ft ocean-going cruiser and its crew.

To stimulate greater interest and participation, it was decided to award three consolation prizes consisting of a TV set and two kitchen appliances.

Five mailings were used to acquaint dealer-contractors with the terms of the contest and the prizes that were being offered. The mailings consisted of an announcement in the form of a bulletin which was followed up by a letter and three postcards. These were sent out to a screened list of approximately 1700 dealer-contractors — both customers and prospects.

The contest was timed to open with the beginning of the fall heating season. Star Steel salesmen promoted the program through personal contact, and the contest became a frequent topic of conversation between dealer-contractors and salesmen. Several new accounts were opened as a result of the interest generated by the contest. A dealer-contractor training session was conducted by the manufacturer, and many dealer-contractors made use of the floor display which was tied in with the promotion.

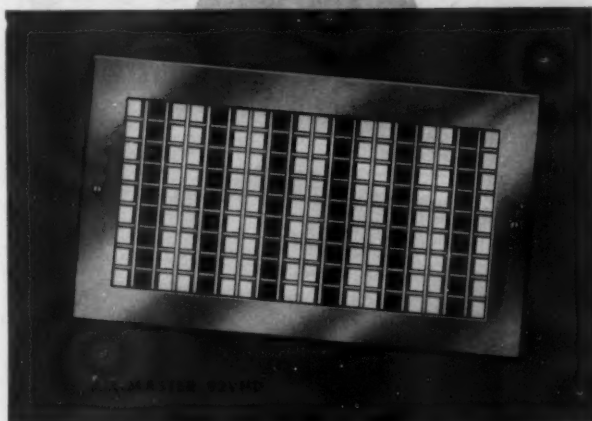
In commenting on the over-all results of the campaign from a standpoint of sales, Carl E. Beltz, Star Steel sales manager, said: "I consider that this was one of the most successful contests I've ever been connected with. One hundred and eighty-two individual firms were entered in the contest, and that represents over 10 percent of our total dealer-contractor potential. The increase in equipment sales was highly satisfying."

► **WILSON ELECTRIC CO.**, Rockford, Ill., has added 39 counties to the territory it covers for Carrier Air Conditioning Co. Selwyn Seek, president of the Wilson firm, said the company has recently opened branch offices in Peoria, Ill. and Davenport, Iowa, to serve the new territory. Donald Kelly has been appointed branch manager at Peoria, and Kenneth Freeman has been named to head the Davenport office.

► **CENTRAL AIR CONDITIONING, INC.**, 455 Scott Ave., Memphis, has been appointed a distributor of Perfection heating, heat pump and air conditioning products in Memphis as well as Arkansas and Mississippi. Julian Kearsy, President of Central Air Conditioning, recently served as Perfection district manager in the Memphis area. Other officers of the Memphis firm are William R. Estes, vice president, and Euell Teague, secretary-treasurer.

Announcing the New Air-Master Series 92

**THE ULTIMATE IN ADJUSTABLE LOUVRE
REGISTERS AND GRILLES**



Here's 4-way deflection with "pin-point" air control... for commercial and residential installations... the product of years of testing and development.

• **CONSTRUCTED OF RUST-FREE
ALUMINUM**

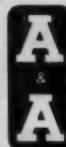
• **COMPLETELY CONDENSATION-PROOF**

A sturdy, yet lightweight unit that defies comparison for both beauty and performance.



The Air-Master series contains four register styles and four styles of grilles. All standard and non-standard sizes are now available.

Ask your local jobber about the new Air-Master Series and get your copy of the new full-color A & A Catalog 60 or write direct to:



THE A & A COMPANY
The complete line of Air-Master Series 92 Louvre Registers & Grilles
1001 CANTON ROAD, CHICAGO, ILL. 90

GUARANTEED

... not for 5 years, not for 10 years
... not for 15 or 20 years, but

**UNCONDITIONALLY
GUARANTEED**



XXTH CENTURY'S
Zeph-Air

Zeph-Air is the gas furnace with the cast-iron heart. The entire heating element is unconditionally guaranteed — for LIFE!

A limited number of exclusive franchises protect our dealers — and we assist them with many kinds of dealer help. Write today to see if a franchise is open for you. We'll give you the details you need and want — no obligation, of course. We'll also be pleased to furnish complete information on our air conditioning units for use with our heating equipment.

XXTH CENTURY

HEATING & VENTILATING CO.

96 IRA AVE.

Since 1894

AKRON, OHIO

appointments . . .

► J. E. PRICE as sales manager for Thatcher Furnace Co. Mr. Price joined the firm in 1945, has served in various capacities including sales representative in central New Jersey and manager of the Chicago sales office and warehouse.

► D. D. WILLIAMS as sales manager, central air conditioning products, for Albion Div., McGraw-Edison Co. Mr. Williams has been with the division for the past three years as regional manager in the southeastern region. P. J. Margherio has been named midwestern regional manager and will be responsible for sales in North and South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Illinois, Wisconsin, Indiana, Ohio, Michigan and parts of Kentucky. He will headquarter in the St. Louis area.

► DONALD A. MCKAY as sales manager for the Boston office of Limbach Co. Mr. McKay joined the company in 1960, was previously a sales engineer with Charles P. Blouin, Inc. He will serve customers in the New England area. John J. McKee has been named estimating manager for the Boston office.

► R. W. LINDSAY, formerly director of marketing, as vice president in charge of sales for The C. A. Olsen Mfg. Co. As director of all sales activities, he succeeds Edward P. Hayes, executive vice president, who will remain with the company as marketing consultant to the president. Before joining the Olsen company, Mr. Lindsay was associated with Crane Co. as director of marketing of the Plumbing, Heating and Air Conditioning Group.

► LEE EPLEY as director of advertising and sales promotion for Chrysler Corp.'s Airtemp Div. Mr. Epley, who has been with the division for 20 years, succeeds Richard R. Routh Jr. Mr. Routh has joined Grant Advertising, Inc. as vice president and will continue to supervise the Chrysler Airtemp account. In his new position, Mr. Epley will supervise the division's advertising, national trade show exhibits, national business conferences, incentive programs, sales promotion, and production of printed material.

► GEORGE F. HAFKEMEYER as Texas district manager for Typhoon Air Conditioning Div., Hupp Corp. He was previously with United Gas Corp., Houston, where he served as supervisor of heating and air conditioning engineering and sales.

► JOSEF H. BUERGER JR. as director of sales for Crucible Steel Co. of America. Mr. Buerger will be

appointments

(Continued)

responsible for all sales activities and will direct field sales through five regional managers and 38 sales offices and warehouses. He will also supervise the managers of all product divisions. Prior to his recent promotion, he served as assistant to the vice president, commercial. Robert M. Simpson has been appointed assistant director of sales. Mr. Simpson was formerly assistant general manager, field sales.

► **ROBERT E. CASNER** as a vice president of Crane Co. Mr. Casner has also been named general manager of the Plumbing, Heating and Air Conditioning Group located in Johnstown, Pa. He was previously vice president of the Townsend Co. of Beaver Falls, Pa.

► **JOHN S. KILLEEN** as eastern district manager for the Lima Register Co., replacing Norman DeLillo. Mr. Killeen will supervise sales in New Jersey, Pennsylvania, Maryland, Delaware and the District of Columbia.

► **JAMES E. BAYNE** and **FRANK J. SPRAGUE** as district sales managers for Silent Automatic Products. Mr. Bayne will cover metropolitan New York, eastern Pennsylvania and New Jersey. Mr. Sprague will serve upstate New York and northern Pennsylvania.

► **JOHN P. BALKE** as St. Louis district sales manager for the Fulton Sylphon Div. of Robertshaw-Fulton Controls Co. Four new sales engineers have joined the division and will be located in various offices. They are: Mack Jacobs, Houston; John C. Dwyer, Baltimore; Thomas J. Fisher, Knoxville; and J. C. Cate, Knoxville.

► **ROBERT J. KRIEG** as midwest regional sales manager for Jet-Heat, Inc. In addition to establishing distributorships, Mr. Krieg will be responsible for conducting sales schools for distributors and dealer-contractors. Hy Appleton has been named direct district sales manager, and Robert Hull has been appointed southeastern regional sales manager.

► **RAY LONG** as branch manager of the Detroit sales office of Ilg Electric Ventilating Co. Mr. Long was previously manager of the Baltimore office.

► **EDWARD C. JOHNSON** as central sales manager for the Norman Products Co., Div. of John J. Nesbitt Co. Mr. Johnson's territory will include 16 central states where he will be in charge of the sale and promotion of gas-fired heating and ventilating equipment for schools, unit and duct heaters, and horizon-

BRUSHES and SCRAPERS

For Cleaning Tubes and Flues

of
**BOILERS • FURNACES
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Wholesalers:
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**WORCESTER BRUSH AND
SCRAPER CO.**

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BRUSH CO.**

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CONNECTICUT

BENCH BRAKES

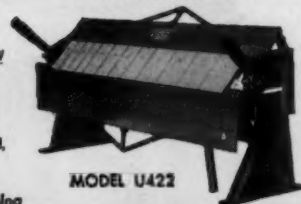
PLAIN & UNIVERSAL
"MORE BRAKE PER DOLLAR"

Model No.	Length	Shipping Weight	Price F.O.B. Factory
322	3 ft.	155 lbs.	\$125.00
422	4 ft.	185 lbs.	155.00
U322	3 ft.	205 lbs.	170.00
U422	4 ft.	250 lbs.	225.00

Capacity 1/2 flange on 22 gage mild steel, full length, on all models.

* Universal brakes with fingers.

See your Dealer or write for catalog



MODEL U422

BUILT BY **W. WHITNEY STUECK, INC.**

BOX 355A,

OLD SAYBROOK, CONN.

SAMPLES FREE

**SODER STAINLESS
STEEL & ALUMI-
NUM RAPIDLY**



FLUXES

**SODERING
BRAZING & WELDING**

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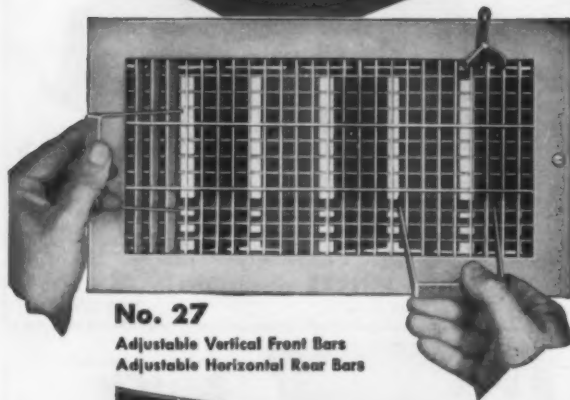


9302 Berenice, Schiller Park, Ill. — Metropolitan Chicago Area

INDEPENDENT

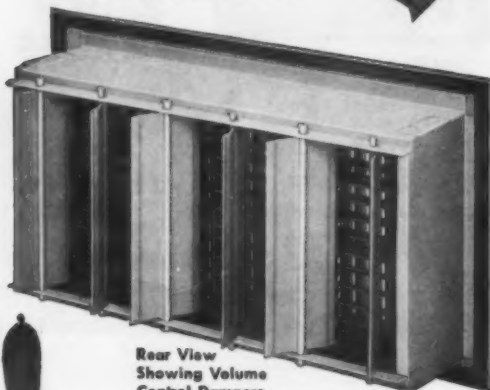
"Fabrikated"

DOUBLE CORE REGISTERS
with opposed blade dampers
for central
Commercial Installation



No. 27

Adjustable Vertical Front Bars
Adjustable Horizontal Rear Bars



Rear View
Showing Volume
Control Dampers

Write for Catalog
No. 58 which gives
complete details and sizes
up to 48" x 24"

Always leading—Always Progressing



**THE INDEPENDENT
REGISTER CO.**

3747 E. 93rd STREET • CLEVELAND, OHIO

appointments

(Continued)

tal furnaces for residential and commercial applications. He has been with the firm since 1946.

► CARLYLE ABBOTT as a district representative working out of the Detroit office for the Pop Rivet Div. of United Shoe Machinery Corp. Mr. Abbott will cover part of Ohio and part of Michigan. Thomas R. Freeman, with offices in Kansas City, Mo., will serve Colorado, Kansas, Missouri, Montana, Nebraska, North and South Dakota and parts of Kentucky, Tennessee and Illinois. Ned B. Turner will represent the division in Arkansas, New Mexico, Oklahoma, Texas and part of Louisiana. He will headquarter in Dallas.

► T. E. BYERLY CO., INC., as sales representative for General Blower Co. in the Baltimore area.

► C. W. DEAN as Memphis sales representative for Ilg Electric Ventilating Co.

► H. R. DAVIES SALES AND ENGINEERING, New Orleans, as sales agent in parts of Louisiana and Mississippi for Joseph T. Ryerson & Son, Inc.

► ZINTEL-DEVITT CO., Chicago, as exclusive representatives in the Chicago area for Champion Blower & Forge Co., Inc.

► FRANK J. TAYLOR as representative in northern California, Utah, Colorado and Nevada for J. Wiss & Sons Co. Art Pearson, who formerly covered Indiana and Illinois, will now serve Washington, Oregon, Montana, Wyoming, Idaho and British Columbia.

► HENRY HANSEN as a field sales representative for Parker-Kalon Div. of General American Transportation Corp. He will cover Colorado, Wyoming, Utah and New Mexico; the western portions of Nebraska and South Dakota; and El Paso County, Texas. Other new field sales representatives are John Keeble, who will serve Maryland, Delaware and the District of Columbia as well as parts of Pennsylvania, New Jersey and Virginia; and Richard Knobloch, who will represent the division in southern Indiana, the Dayton-Cincinnati area of Ohio, Kentucky, and parts of Illinois.

► OHIO HYDRONICS, INC. (formerly Rock & Donelson), Cleveland, as a manufacturer's representative handling heating and air conditioning products for Modine Mfg. Co.

... move your products in greater volume
through consistent advertising in this

Service Section...

Rates for display space in the Service Section are \$14.00 per inch per insertion. One-inch minimum space accepted. Closing date — twentieth of the month preceding issue.



**SO SOFT RUBBER
KNEE PROTECTORS**
EVERY ROOFER SHOULD
HAVE A PAIR.
PRICE \$2.50.
ORDER YOURS TODAY.

JOHNSON
LADDER SHOE CO.
EAU CLAIRE, WIS.



FLOAT VALVES for

Evaporative Coolers, Poultry
Troughs, etc.

Operates in 1" of water.

DAN MOREY

814 S. Robertson
Los Angeles 35, Calif.

Your advertisement in this one
column by one inch space costs
only \$14.00 per issue — and we'll
provide copy service

✓ **AIR LOSS**

✓ **AIR
DISTRIBUTION**
IN 30 SECONDS

with

safe • fast • positive

Kilgore

SMOKE CANDLES

Write Today For Catalog
Harvell-Kilgore Corp., Bolivar, Tenn.

✓ AGENTS WANTED

EXCEPTIONAL OPPORTUNITY for MANUFACTURER'S REPRESENTATIVE

Nationally - known manufacturer of heat-
ing equipment offers choice exclusive terri-
tory to well established representative.
Unique commission arrangements.

Write Key 1212, American
Artisan, 6 N. Michigan Ave.,
Chicago 2, Illinois.

THE LANE
VENT-GRAB
VENT HANGER

Is Faster!
Does A Better Job



VENT-GRABS save time and money.

• Tighten two bolts (drawband style) on
class B Vent Pipe. Cut hole in sub floor,
insert pipe, nail Vent-Grab to floor.
• 4, 5, 6, 7, 8, 10, 12 inches. Packed 12
per carton.

• Solid base automatic 1" fire clearance.

Dealers, Wholesalers, Agents, Write:

LANE SHEET METAL, Inc.

c/o Herb Gibson, 5634 E. Glenmoor Rd.
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Rates for classified advertising are
15 cents for each word, including
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Count nine words for keyed ad-
dress. Minimum \$2.50. Closing date
20th of month preceding publication.

✓ SITUATION OPEN

ESTIMATOR WANTED: General Sheet Metal Shop,
Mid-West location. Wonderful opportunity for right
man. Write Key 1202, American Artisan, 6 N. Michi-
gan Ave., Chicago 2, Ill.

✓ EQUIPMENT WANTED

Wanted: Close out lots of warm air residential heating
equipment. Write giving description and price to
E. L. Bilek, 2025 Zollinger Road, Columbus 21, Ohio.

✓ AGENTS WANTED

REPRESENTATIVES WANTED — for top quality line
of registers, grilles, diffusers, etc. Established
manufacturer has a number of exclusive territories
open. Unusually fine commission basis for manu-
facturers' agents calling on architects, engineers, con-
tractors, etc. Please reply Key 1213, American
Artisan, 6 N. Michigan Ave., Chicago 2, Illinois.

PROFITABLE SELLING . . . with competitively
priced, wide model range of Hi-Boy Low-Boy,
Counter-Flow and Horizontal Warm Air Gas (AGA) and
Oil (UL) Automatic Furnaces. Representatives calling
on contractors or dealers wanted . . . territories
open. Colorful sales literature describes trouble-free
construction, simple, modern design, economical opera-
tion. Write now, list lines handled and territories
covered, to Key 1211, American Artisan, 6 N. Michi-
gan Ave., Chicago 2, Ill.

✓ FOR SALE

FOR SALE — One 10 ft. Power Shear. Geo. Ohio
Mfg. A-1 condition. Stainless Blade. Price
\$1500.00. Ted Kuck Company, 1616 Broadway, She-
boygan, Wisconsin.

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Learn How the Pros Figure The Big Jobs By
Poundage-Square Footage — Linear footage —
Fittings. This information is ordinarily very closely
guarded and is invaluable to the progressive shop
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Send check or money order \$3.50 made out to

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Medway 3, Mass

GM Delco ANNOUNCES



A NEW AIR CONDITIONING LINE

CENTRAL RESIDENTIAL COOLING UNITS FOR EVERY TYPE AND SIZE OF HOME, NEW OR OLD! THE ENTIRE MARKET IS YOURS WITH THE GM-DELCO LINE!



COOLING COIL (EVAPORATOR) UNIT

Now there's a Delco-engineered air conditioning unit to fit any Delco furnace. Installation is quick and simple. Also, you can convert your customer's present forced air furnace to central air conditioning with just the right GM-Delco unit to make it easy, practical and profitable!



REMOTE CONDENSER UNIT

The GM-DELCO line includes attractive, weatherproof condensing units in sizes to meet a wide range of needs. Durable built for outdoor installation and designed for the most efficient operation. Ratings from 22,000 to 56,000 BTU/HR. Maximum over-all dimensions—Height 28 $\frac{3}{4}$ " , Width 48 $\frac{3}{4}$ " , Length 31 $\frac{3}{4}$ " .



SELF-CONTAINED SYSTEMS

The GM-DELCO line offers you completely self-contained cooling units. Shown is a type for use with hot water, steam or other heating systems without duct work. Easily installed in attic or crawl space with inexpensive duct work.

THE GM-DELCO HEAT PUMP

The GM-DELCO Heat Pump (not shown) is available as a self-contained or split system and provides both heating and cooling as required.

A COMPLETE LINE OF AIR CONDITIONING, HEAT PUMPS, FURNACES, BOILERS AND WATER HEATERS TO MEET ALL YOUR REQUIREMENTS.

GM Delco 365 CONDITIONAIR

DELCO APPLIANCE DIVISION, GENERAL MOTORS CORPORATION, ROCHESTER 1, N.Y.

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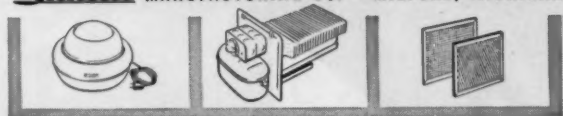
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This entirely unsolicited statement from Mr. Melvin J. Knust of the DEAN HEATING & AIR CONDITIONING CO., of Omaha, Nebraska, typifies the reaction of installers throughout the nation when first they try METLVENT. The entire contents of Mr. Knust's letter to us is quoted below:

"Anytime changes are made in our organization, I feel that these changes must be justified. When we were asked by our local distributor to try Hart & Cooley's new Metlvent chimney, I had two questions to ask. The first question was how does it compare in quality to that which I am now using and the second question was how does it compare in over all costs installed.

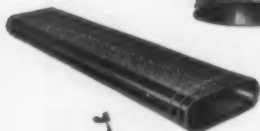
"The answer to both questions came very quickly after we made our first installation. First of all, the quality of the Metlvent is by far superior to any pre-fabricated chimney we had ever used. The installation was made with considerably more ease than anything I had ever seen.

"I can sell Metlvent with more satisfaction and still have an overall savings of twenty-five per cent or more. We feel Metlvent has answered our venting problems."

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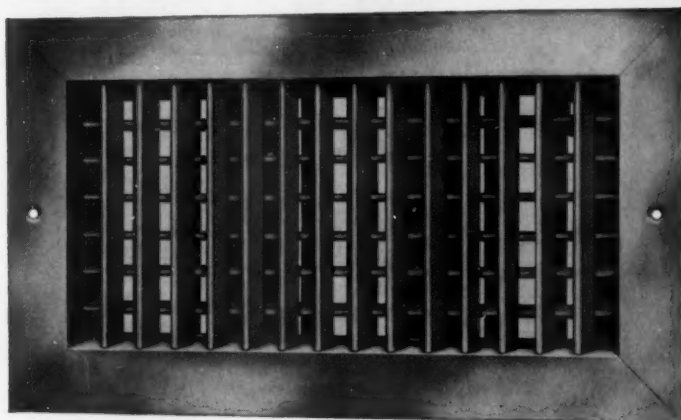
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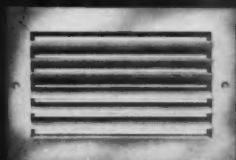
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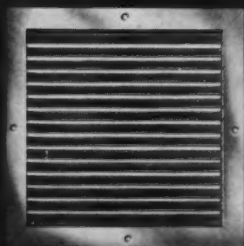
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